The Science and Math for Everyone Project
Norfolk State University

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Final Report

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Executive Summary

This is the final report of the Science and Math for Everyone Project, a special grant that was received by Norfolk State University for two years (from June 1997 to August 1999) from NASA Langley Research Center's Office of Education. The Science and Math for Everyone Project is a quasi-experimental research/education intervention strategy developed to assist disabled, economically disadvantaged, female or ethnic minority students in public school systems whose needs have been traditionally underserved and whose potential have been universally underdeveloped in the science and math areas. This project specifically intended to assist these students to succeed in the subjects of science and math in local schools with six operationalized input and output goals.

During the first year (1997-98 school year), 31 selected seventh graders from two middle schools in the Norfolk Public Schools (Lake Taylor and Northside) were served by four education undergraduate and four social work undergraduate interns. During the second year (1998-99 school year), 32 from seventh grade and 21 from eighth grade at Lake Taylor were served by the same number of interns. Education interventions consisted of (1) after-school academic activities three days a week, (2) social skills activities, and (3) several field trips with hands-on experience. Family interventions were implemented by four graduate social work interns in order to help parents of subjects better understand and get more involved in student learning activities. In addition, two formal training workshops were provided to a total of 55

teachers and other personnel to help them understand cultural diversity better and deal with the minority student population more effectively in the instructional environment.

The project outcomes were primarily measured by objective criteria such as grades in science and math, Criterion Reference Test (CRT) in science and math, GPA, selection for higher math, and Standards of Learning (SOL) tests. Findings were generally moderate and the project had a somewhat limited impact, especially for the first year. The experimental group partially met the academic goal of the project (for an average 20% increase in math scores, a 15% increase in opting for higher math, and a 0.5 GPA improvement), but so did the control group more or less, thus discounting the net impact. The improvement rates of CRT science scores and self concept scores (measured by Piers-Harris Children's Self Concept Scale) of both seventh and eighth graders during the second year were impressively strong. Student evaluation was generally positive, and there were many intangible indications that the project generated high motivation, great excitement, and crucial momentum for further development among students, teachers, and administrators. The "LAKE (Linking Achievement to Kinesthetic Education) Project" is such an innovative spin-off development partially due to the support of this project. Through this project experience, a unique educational intervention model has been introduced with detailed documentation herein for careful review and proper dissemination. Specific recommendations were presented with the hope that a similar and refined project would be replicated. A financial report will be submitted separately by the University Reporting and Compliance Office as will be the external evaluation report by Dr. James Patton of the College of William and Mary.

I. Introduction

"Science and math *are* for everyone." This is proclaimed by influential, national education initiatives. There have been several reports on this theme, including *Science for All Americans* (Rutherford and Ahlgren, 1994), *The Handbook of Research on Science Teaching and Learning* (Gavel, 1994), and *America 2000: An Education Strategy* (U.S. Department of Education, 1991). Yet, there are three most neglected populations in science/math educational programs for gifted students: they are individuals whose talents are not recognized or actualized because they are (1) disabled; (2) culturally different from the mainstream student population; and/or (3) economically disadvantaged (Van Tassel, Patton and Prillaman, 1991). School districts frequently overlook these youngsters when identifying gifted youth for special science and math programs (Baldwin, 1995). Even when such students are found and placed in those programs, little attention is given to socioeconomic or cultural factors that may negatively affect their school performance and their future achievements (Thompson, 1992). These students are at risk. They are in danger of missing the benefits of support services, such as excellent NASA-sponsored educational services designed to nurture special abilities in science and math. Our nation is also at risk. Unless effective intervention strategies are developed and implemented, we will lose a significant "talent pool" for diversifying our technology workforce which is dependent on students who are proficient in science and math.

(A) Background

This project had timely responsiveness and solid relevance to the NASA Strategic Plan. *The Space Science Enterprise Strategic Plan* (September, 1995) states:

> The Space Science Enterprise uses its knowledge and discoveries to enhance science, mathematics, and technology education, and the scientific and technological literacy of *all Americans* (Page 4).

This project was specifically designed to meet this mandate by providing innovative education and outreach strategies for disabled, disadvantaged and minority students who had been underserved. A broad general theme for planned educational activities, involving seventh and eighth grade students, was "aeronautics." Choice of this particular topic is consistent with NASA's Education Division Framework Strategy (*1997 Information Guide to Research and Education Programs*, Page 7)

Also this project attempted to comply with NASA*'s Minority University Research and Education Program Goals* in the following ways:

1. Through unique program design, this project was to foster research and educational activities, which contributed substantially to NASA's mission. For example, this project would serve as a model for developing culturally sensitive science and math programs for disabled, economically disadvantaged and minority students.
2. This project's unique (one of the first of its kind), interdepartmental (NASA-University-Public Schools), 3-tier (Graduate-Undergraduate-Middle School students)

strategy was to sensitize many minority university faculty and students to NASA's manpower goals and objectives.

3. Utilizing NASA's existing resources and support, this project was to motivate the participating disabled, disadvantaged and minority students to seriously consider entering college and thus successfully pursue and complete degrees, hopefully in science and engineering fields.

This project was also consistent with all applicable federal laws and regulations including, but not limited to: Executive Order 12999; The Education for All Handicapped Children Act of 1975 (Public Law 94-142); and The Americans with Disabilities Act of 1990" (Public Law 101-336).

(B) Special Needs

Studies have shown that most students identified for special science and math programs come from above-average socioeconomic backgrounds (Sears and Sears, 1980; Van Tassel-Baska and Willis, 1994). Disabled, economically disadvantaged, and minority students are clearly underrepresented in programs for gifted students (Baldwin, 1995). A 1994 study by the U. S. Department of Education states:

- Minority students and students with handicapping conditions are underrepresented in programs designed to serve gifted and talented students. For example, while minorities comprise 31% of public school enrollment, they represent less than 18% of students selected for gifted and talented programs;

- Students from low-income backgrounds comprise 20% of the nation's student population, whereas they make up only 4% of students who perform at the highest levels on standardized tests;
- High school students from disadvantaged families (in which the mother did not complete high school) are less than half as likely to participate in advanced science and math programs than are more advantaged students;
- Disabled and disadvantaged students are far less likely to be enrolled in academic programs that can prepare them for college and are about half as likely to take coursework in advanced science and math than more advantaged students. For example, less than 2% of high school students from poor families take calculus, as compared with 7% of those from more advantaged backgrounds (Alamprese, Erlanger, and Brigham, 1988).

In 1995, culturally diverse students represented 33% of the public school population. In that same year, 8% of the nation's student population was identified as having a sensory or mobility impairment (i.e.: visual/hearing deficit or physical disability). Also in 1995, 36% of African Americans and 31% of Hispanic Americans were below the poverty level (U.S. Bureau of Census, Statistical Abstract of United States, 1996).

(C) Project Goals

The Project's original goals were formulated as follows:

Goal #1: Develop an effective, culturally sensitive and valid strategy model to improve science and math performance by students who are disabled, economically disadvantaged and/or minority. These strategies would include:

- Family Interventions (implemented by supervised social work interns) to identify and ameliorate socioeconomic, cultural and environmental factors that might negatively impact student performance using a generalist social work perspective based on strength, diversity, and an ecological multi-system; and
- Educational Interventions (implemented by supervised education interns) to assist participants in strengthening their interest and performance in science and math during the seventh and eighth grades.

Goal #2: Design and implement a research scheme to test the efficacy of the above listed educational/family interventions.

This would include quantitative (and some qualitative) assessment of outcomes, based on an experimental research design with maximum control of extraneous variables.

Goal #3: Demonstrate significantly improved science and math performance for participating students including:

1. An average 20% increase in science and math scores on standardized tests during the project period;
2. A 15% increase in the number of program participants who choose or are selected for special science and math programs; and

3. A 0.5 GPA improvement in school grades earned by participating students.

Goal #4: Develop teacher training strategies

This could be done by utilizing social work interns and existing NASA-sponsored programs and materials to better sensitize teachers about cultural and socioeconomic factors that may influence classroom performance, and assist with changing teacher expectations for disabled, disadvantaged and minority students.

Goal #5: Disseminate the validated intervention model for replication

Carefully documented methodology and protocols with major findings of the project would be published so that the same or similar intervention project could be replicated elsewhere for comparative and/or confirmation purposes.

Goal #6: Secure funding for continuation and/or expansion of the project

Upon successful completion of the project, additional support would be sought to extend and/or expand the same or modified strategies, optimally capitalizing project experiences and network resources.

II. Research Design and Implementation

In order to help achieve the above goals, the following methods were utilized:

(A) Collaboration with Norfolk Public Schools

Through the superintendent of Norfolk Public School System, Northside Middle School and Lake Taylor Middle School were designated as the project sites in August 1997. The principal investigator, the project coordinator, and the educational coordinator met with the principals and the lead teachers at each school, and the purpose and process of the project were explained. Principals and teachers at both schools agreed to cooperate with us.

During 1997-98 school year, the project was conducted at both schools with many unanticipated problems. It was decided after consultation with NASA Office of Education to have the Project conducted at Lake Taylor Middle School only for the school year of 1998-1999 for several reasons. Northside Middle School had several of its own grant projects and many extra curricular activities taking place simultaneously. The project's after-school program had very strong competition to draw students' interest and had only 45 minutes before the late school bus.

During the 1998-1999 school year, therefore, Lake Taylor Middle School was the only site having both eighth grade students from the previous year and newly selected seventh grade students. A new science lead teacher and the previous math lead teacher were assigned to the project.

(B) Research Design

Originally this project planned to use a classical experimental design with pre-test and post-test, and two experimental and one control group. However, it quickly became obvious that the project had to be a quasi-experiment because voluntary participation was required and thus true random selection was not possible.

The students whose parents consented to participation in the project were randomly assigned into two experimental groups: one group received only the after-school education program, and another group received family intervention in addition to the after-school program. This design is depicted in the following diagram:

Table 1
Research Design of the Project

Group	Pretest	Intervention	Posttest
E1	O1	X1	O2
E 2	O3	X2	O4
C	O5		O6

E1 : Experimental Group 1 which receives education and family interventions (X1)
E2 : Experimental Group 2 which receives education interventions only (X2)
C : Control Group which receives no intervention
Ox : Observation of respective group at different times

During the first year, we soon realized that all parents in Experimental Group I did not come for the workshop or any meeting and that division of E1 and E2 was not feasible. During the second year, Groups E1 and E2 were used as activity groups and parents in both groups were invited to the parent workshops. Independent variables in this project

were the family intervention and education intervention. The undergraduate social work interns and the education interns worked closely as they strived together to help students improve math and science performance. The social work interns from the master's program exclusively worked with parents. Family intervention was used as parental participation in the project as the analyses. Dependent variables were observed on (1) science and math achievement scores on Criteria Reference Tests; (2) grades in science and math; (3) participation level in a higher math course. In this design, major potential problems were identified as interactions between interventions and selection and also contamination and diffusion among students in different groups, thus possibly clouding net impact.

(C) Sampling of Students

The criteria of middle school student participants were:

- Potential interest or good grade in science and math;
- Physical or sensory disability;
- Ethnic minority;
- Economically disadvantaged; and
- Female students.

Student racial composition, socioeconomic status, and academic activities, and administrative collaboration of both schools were significantly different. From each school, however, students were nominated by the above criteria in order to construct study groups (and supplement attrition students, if necessary) for the project.

In October 1997, teachers and counselors helped to select a pool of 70 ethnic minority or female students who received high scores on the Literary Passport Test, and whose grades in science and math were at least Cs. Both schools did not have information on students' economic status and classes for disabled students. Thus the above two criteria could not be used.

At Northside Middle School, 45 students were randomly selected from the pool of 70 students and were randomly assigned into Experimental Group I, Experimental Group II and Control Group. Then the principal's letters with confidentiality release and consent forms were sent to thirty (30) students in Experimental Group I and II. Seventeen (17) parents returned the consent forms. In January 1998, another forty-three (43) letters were sent out from the reserve pool and from the list that was given by the Central Information Management office. Seven (7) students were added to the group. The attendance for the after-school program was low and only eight (8) students participated in the year-end celebration ceremony.

At Lake Taylor Middle School, the parents of all 70 students were contacted for necessary confidentiality and consent forms. Thirty-three (33) students who returned the consent forms initially were randomly assigned to Experimental Group I and Experimental Group II. Fifteen (15) students for the Control Group were randomly selected from those who did not respond to the letter. Nine (9) more students brought the consent forms later and participated in the program. There were fifteen (15) to thirty (30) students who steadily participated daily in the after school programs. A total of 66 students were involved in the project and 31 students participated through the end of the school year.

Participation of students in the project at both schools during the 1997-98 school year was as follows:

Table 2

Student Participants During 1997-98 School Year

	Lake Taylor	Northside	Total
Selection of criteria students	70	70	140
Letters to parents from principals	70	30	100
Returned parent's consent forms	33	17	50
Additional students	9	7	16
Participants in year-end recognition	23	8	31

At the end of the first year, interim assessment was done. After reviewing the results, it was recommended to have the project only at the Lake Taylor Middle School, adding 30 seventh grade students during the 1998-99 school year. Out of 23 previous year participants, 21 eighth grade students stayed in the project (one student moved away and one student dropped for a special reason). Later, two (2) eighth grade students were added giving a total of 23 eighth grade participants for the second project year.

With the same criteria of selection as previous year, 70 seventh grade minority students were selected. The principal's letters with consent forms were sent to those selected seventh graders in August and the parents meeting was held on August 12, 1998. At this initial informational meeting, 30 parents or guardians came. The purpose and goals of the project were explained, and some of the activities of the previous year were discussed. Twenty-nine (29) seventh grade students started the project and three (3) more students

were added later. A total of 53 students participated in the project during the 1998-99 school year.

Table 3

Student Participants During 1998-99 School Year at Lake Taylor

	7th Grade	8th Grade	Total
Selection of criteria students	70	23	93
Letters to parents from principals	70	0	70
Returned parent's consent forms	29	19	48
Additional students	3	2	5
Participants in year-end recognition	32	21	53

During the project's two-year period, a total of 119 students were exposed to the project.

(D) Personnel Arrangement

In order to implement this project, the personnel were composed of (1) staff, (2) interns, and (3) external evaluators. Their qualifications, role functions, and specific responsibilities are as follows:

(1) Staff Pattern

1. Principal Investigator (1/6 time): Dr. Moses Newsome Jr., Dean and Professor at the Ethelyn R. Strong School of Social Work at Norfolk State University.

   He was administratively responsible for the entire project, including research and strategic planning, budget approval, staff appointment, organizing external networking, evaluating staff performance, and submitting reports to the funding agency.

2. Project Coordinator (3/5 time): Dr. Hannah Sook Paik, Professor, Ethelyn R. Strong School of Social Work at Norfolk State University.

She was responsible for research design details and daily management of the project activities, directly supervising the Doctoral Intern and Administrative Assistant. In close collaboration with the Education Coordinator, she coordinated and made the necessary arrangements for internal and external activities, scheduling, financial management, and documentation of all planned events and tasks. Additionally, she made all logistical and technical decisions about the research process, compiled and analyzed all data, and made written and oral reports to the Principal Investigator on a regular basis. In consultation with the Principal Investigator, she also prepared the final report to the NASA's Office of Education.

3. Education Coordinator (1/4 time): Dr. Carl Leslie, Assistant Professor, Norfolk State University School of Education during 1997-1998 school year, and Mrs. Harriet Brown, Assistant Professor, Norfolk State University School of Education during 1998-1999 school year.

The Education Coordinator collaborated with the Project Coordinator and school personnel (principals and math and science lead teachers) and supervised Education Interns in the field. They along with lead teachers developed and monitored specific educational activities of the project as well as related teaching content and processes.

4. Lead Teachers: Mrs. Judy Gulledge, science teacher from Northside Middle School and Miss Dana Capeheart, math teacher from Lake Taylor Middle School during the 1997-1998 school year, and Mrs. Pam Arline, science teacher and Mrs. Dana

Capeheart White, math teacher from Lake Taylor Middle School during the 1998-1999 school year.

They helped the Education Coordinator to developed activities, monitored interns and students in the after-school program, and took the role of liaison to other teachers. They collected data on students from school personnel.

5. Collaborating Specialist (about 1/4 time): Dr. Hee Ja (Grace) Lee, Professor of Child Development at Myong Ji University College of Human Ecology in Korea and a Visiting Professor at Norfolk State University from February 1998 to February 1999.

She has provided invaluable consultation and collaborative assistance from her expertise in child development, student learning behavior, and cultural perspectives. While working as a volunteer for the project, she has given much of her time and energy for all major student activities including field trips and training sessions in close collaboration with the Project Coordinator.

6. Administrative Assistant (full time): Mrs. Jennifer Barksdale.

She was a full-time clerical staff on an intermediate level, offering office management services for the project, including word processing, database management, spreadsheet, electronic file transfer, and record-keeping. Under the direct supervision of the Project Coordinator, she was responsible for requisition routines, data entry, correspondence, file management, and other clerical support.

(2) Selection of Interns

One doctoral social work (DSW) intern, Ms. Sherin Shearin, is a school social worker in the Norfolk Public School System and has been supervising social work interns. She

supervised MSW and BSW interns on day-to-day practices in the field (two to three days a week) for the whole project period. She developed a Family Assessment Survey and collected them from participants' families through MSW interns. She made linkages with schools, Cooperating Hampton Roads Organizations for Minorities in Engineering (CHROME) programs, community resources and social agencies

Social work interns (MSW & BSW) were selected through written applications and personal interviews. The following qualifications were used for screening and selection, even though not all selected met all criteria:

- Interest in science and math
- Experience in group activities with middle school students
- Computer literacy
- Understanding of diversity and disability
- Skills in relationship building
- Knowledge and skills in family intervention (MSW)
- Minority preferred.

Each semester, 4 MSW interns, 4 BSW interns and 4 education interns were used. The social work interns participated in the project as a part of their field practicum and stayed in the project for the whole year. The BSW interns usually changed the field placement each semester but our project interns stayed for two semesters except two BSW students who graduated after one semester.

Educational interns posed some difficulties in the selection and placement processes. Initially we planned to select student teachers in science and/or math. Student

teachers for the secondary education placement usually stayed in middle school for a half of the semester and in high school for the next half of the semester. Through a special arrangement, they were required to stay for the whole semester. Education interns as student teachers, however, placed their priority of responsibility on student teaching instead of the project. They could not come to the project activities right after school because they had to work with cooperating teachers, and if they had a detention student, they had to bring him/her to the project meetings. Student teachers had a very heavy load with their student teaching and it was difficult to find student teachers in science. Therefore, we recruited sophomore and junior undergraduate students in the science field, but many of them had to attend lab classes at the time when the project after-school program was being conducted. There were inevitable changes of science interns even during the semester. Some students would rather have a part-time job to work longer hours for more money than the stipend. This fact and other difficulties have interfered with the education input to the project considerably.

There were 4 MSW interns, 5 BSW interns and 10 education interns during the 1997-98 school year and 4 MSW interns, 5 BSW interns and 9 education interns during the 1998-99 school year.

The interns attended the one full-day orientation of the project at the beginning of the each school year where the following items were discussed:

- Purpose of the project
- Structure of experimental groups
- Teams at the middle schools
- Guidelines for interns

- Risk factors of families, students and classrooms
- Logistical procedures at schools
- Roles of different interns

(3) External Evaluator

As an independent, external evaluator/consultant, Dr. James Patton, Associate Dean of College of William and Mary School of Education, has been consulting on the project progress and outcomes in relation to stated goals, program activities, performance level, and assessment of various data. He has been preparing a "Project Evaluation Report" which will be submitted separately.

III. Description of Families and Students

The MSW interns conducted family assessment surveys from all parents in the experimental group. During the 1997-1998 school year, 56% of the parental surveys were returned. This included: 20 from Lake Taylor Middle School and 8 from Northside Middle School totaling 28. During the 1998-1999 school year at Lake Taylor Middle School, they collected thirty-five surveys (68.6%). Although those who did not respond might be different, the majority of the respondents were high school graduates, employed, and had three children.

(A) Family Background

A majority of those who answered to the family need assessment survey during the 1997-98 school year were mothers (24). Two surveys were answered by both parents; one by father; and one by grandmother. Nineteen of them (68%) were employed and twenty stated that other adult family members were employed. Their monthly median family income was $1,700. The respondents' median education levels were 13 years of schooling. A majority of them (82%) would go back to school if they had a choice. Twenty-seven (96%) thought that education was very important and twenty-five (89%) expected their children to complete college. Eleven respondents (39%) did not see any barriers to their child's future education, while nine (32%) thought financial barriers existed. One-quarter of the parents responding indicated they need assistance to remove the barriers.

All respondents stated that their child had a quiet place to study. Twenty-five (89%) indicated that the child had a specific time to study and a daily routine to follow after school. All families expected their child to finish homework assignments all of the time, but only three-quarters offered to help if needed and one quarter of parents always remained with him/her until it was finished. All families except one stated that there was a family member at home to assist the child with homework if needed. The median time to spend on homework in one subject was about 30 minutes. Three-fourth of children watched TV more than two hours an evening. They generally watched sit-coms (79%) and comedy (68%). Educational programs were watched only by 46% of children. All families stated that there were educational materials in the home for their child's use; one half of them took their child to the local science museums; while only twelve (43%) had access to a computer at home.

At their child's current school the majority of the parents had been involved in school functions: met the child's teachers (89%); met the guidance counselors (54%); attended open house or a PTA function (68%); attended parent-teacher conference day (75%); had been to a play, chorus, sports event, or science/math fair (75%). One quarter of the respondents volunteered for field trips. Little time due to their jobs, tiredness after work, and level of education were noted by respondents as obstacles that prevented involvement with their child's school.

The survey in 1998-1999 school year indicated that the median education level of both fathers and mothers was that of a high school graduate. One father and three mothers graduated from college. Twenty-four fathers out of 27 responses (88.9%) were employed full-time, two not employed, and one unknown. Twenty-five mothers were employed full-

time, five part-time and five no employment. Their median family annual income was around $24,000 and their occupations varied widely. There were four fathers in the military and others worked as city employees, electronics, minister, longshoreman, city employee, contractor, fiscal analysts, etc. Mothers worked as teachers, secretaries, nurse, sales clerk, data entry person, office assistant, packer, housekeeper, etc. Sixteen children (45.7%) were living with both parents, eighteen (51.4%) were living with mother and one was living with father. Concerning family educational resources, twenty-five families (71.4%) had dictionaries, sixteen families (45.7%) had computers, sixteen families (45.7%) had encyclopedias, and sixteen families (45.7%) had calculators among other resources. They indicated the sharing of family activities as going to church most (60%), then watching TV (51.4%), movies (37.1%), shopping (40%), amusement park (31.4%). Their choice of student's leisure time is mostly in music, then writing, drawing, sports, and reading in descending order. When they are alone, they spent their time in music, TV, and reading. The most chores that students do at home were tidying up his/her room and washing dishes.

Most parents wanted their child to be successful in his/her choice and wanted them to go to college. Sixty percent of parents considered their child's academic work was above average and forty percent of parents considered their child's academic work was average. Except one, all parents thought that their child wanted to attend college. Both fathers' and mothers' attitudes toward education were very positive indicating education as important, priority, significant, necessary, and serious. Parents thought their child's own career goals were in the medical field (25.7%) and sports (25.7%). Other goals were in law (11.4%), teaching, astronaut, engineering, business, accounting, art, military, etc.

(B) Students' Profile

At the end of the 1997-98 school year, there were 31 students in experimental groups: 23 students from Lake Taylor Middle School and eight students from Northside Middle School. It was difficult to assess attendance and mortality rate because attendance patterns were irregular. Some students rarely came to the after-school program and some students were added during the program. Among 31 students in experimental groups, 27 of them were African American students (87.1%), one white female student (3.2%), and three other ethnic background students (9.7%). There were more female students (n=21; 67.7%) than male students (n=10; 32.3%) because female students were one of the criteria along with ethnic minority and disability.

During the 1998-1999 school year, 52 students participated in the project at Lake Taylor Middle School. Almost all students were African American (n=49; 94.2%) and the others were Hispanic (n=3; 5.8%). Similar to the previous year, there were more female participants (n=28; 53.8%) than male students (n=24; 46.2%). There were 32 seventh grade students (61.5%) and 20 eighth grade students (38.5%).

Table 4

Demographic Information of Participants (Experimental Group)

		1997-98 School Year		1998-99 School Year	
Gender	Male	10	32.3%	24	46.2%
	Female	21	67.7%	28	53.8%
Race	African American	27	87.1%	49	94.2%
	Hispanic			3	5.8%
	Asian				
	White	1	3.2%		
	Other	3	9.7%		
Grade	7th Grade	31	100%	32	61.5%
	8th Grade			20	38.5%

Table 5

Demographic Information of Control Group

		1997-98 School Year		1998-99 School Year	
Gender	Male	13	43.3%	15	53.6%
	Female	17	56.7%	13	46.4%
Race	African American	18	60.0%	23	82.1%
	Hispanic			5	17.9%
	Asian				
	White	5	16.7%		
	Other	7	23.3%		
Grade	7th Grade	30	100%	14	50.0%
	8th Grade			14	50.0%

Among 30 students of the control group for 1997-1998 school year, there were 18 African American students (60.0%), five white female students (16.7%) and seven other ethnic background students (23.3%). Seventeen students (56.7%) were female. For 1998-

1999 school year, the control group composed of 82.1% African American students, 17.9% Hispanic students, 53.6% male students and 46.4% female students. The larger proportion of female students in experimental groups than control group might indicate that the selection criteria had a skewing effect and/or more female students stayed in the project.

As selection measures, the Literary Passport Test scores and percentile in science and math of the Iowa Basic Skill Test were used. There was no statistically significant difference between experimental groups at Northside and Lake Taylor Middle schools. The experimental group and control group seemed to be similar. There was no statistically significant difference between experimental group and control group in Literary Passport Test Reading (t=-.93, df=49, sig=.36) and Math (t=.12, df=41, sig=.90) for the 1997-1998 school year. For selection of seventh grade students in 1998, the percentile of the Literary Passport Test scores was used. Also for 1998-1999 school year, there was no statistically significant difference in Reading (t=-.28, df=44, sig=.78) and Math (t=.66, df=44, sig=.51). Comparison of grades in science and math, and Criterion Reference Test in science between the experimental group and the control group indicated no statistically significant difference. The Iowa Basic Skill Test which was taken at the fifth grade also showed no difference between the experimental and control groups. However, it seemed that the control group had higher scores, particularly in science and math on the Iowa Basic Skill Test, even though the differences are not statistically significant.

Table 7

Comparison between Experimental and Control Groups
At the Beginning of the School Year

	Experimental Group	Control Group	t	df	sig
1997-1999 School Year					
LPT Reading Scores	264.56	268.29	-.93	49	.36
LPT Math Scores	268.05	267.68	.12	41	.90
IBST Science Percentile	55.12	65.25	-1.33	43	.19
IBST Math Percentile	51.00	65.67	-1.89	44	.07
1st Quarter Science Grade	2.59	2.69	-.35	53	.73
1st Quarter Math Grade	2.50	2.59	-.31	53	.76
1998-1999 School Year					
LPT Reading Percentile	52.06	53.93	-.28	44	.78
LPT Math Percentile	70.41	66.93	.66	44	.51
CRT Science 12/98	37.32	31.93	.90	56	.37
1st Quarter Science Grade	2.50	2.59	-.31	53	.76
1st Quarter Math Grade	2.29	2.33	-.15	64	.88

IV. Major Findings

Major findings were arranged according to the original or modified six goals as criteria of outcome measures of the project as follows:

Goal #1: **Develop an effective, culturally sensitive and valid strategy model to improve science and math performance by students who are disabled, economically disadvantaged and/or minority. These strategies would include:**

- **Educational Interventions (implemented by supervised education interns) to assist participants in strengthening their interest and performance in science and math and to enhance their social skills; and**
- **Family Interventions (implemented by supervised social work interns) to identify and ameliorate socioeconomic, cultural, and environmental factors that might negatively impact student performance using a generalist social work perspective based on strength, diversity, and an ecological multi-system.**

This goal is primarily input measure of intervention and operational implementation of project plans stated earlier. The educational interventions were provided by both undergraduate education (BS) interns and undergraduate social work (BSW) interns as a team. Family interventions were provided by graduate social work (MSW) interns. While education interns took a leading role in academic matters, social work interns (BSW) closely working with them provided social skill training.

(A) Educational Intervention Measures

Educational intervention included after-school programs and field trips. After-school programs ran after all classes from 2:00 p.m. to 4:00 p.m. on Tuesday, Wednesday and Thursday, when the after-school activity bus was available. Students were encouraged to come to the program at least twice a week. The after-school programs had two components: academic and social enhancement.

(1) After-School Academic Activities

The education interns played a main role to improve the students' academic performance and to promote students' interest in science and math at the after-school program three days a week. Education interns worked on academic skill development and immediate performance improvements, consulting with the teachers. The Virginia Standards of Learning (SOL) manual was used as a guide to develop student plans. In order to enhance student interest and success, various equipment and materials were used such as computers, printers, digital camera, calculators, academic learning software packages, encyclopedia, dictionaries, and educational supplies that the project provided. The educational interns worked with small groups of students on the computers, familiarizing the students with various items in the chemistry lab and with the algebra programs.

The science activities were in line with Standards of Learning goals set forth by the State of Virginia. The lead teacher and interns developed activities that were conducive to

the project objectives. Students preferred to conduct science experimental activities, doing more hands-on experiments or making things. Many experimental activities were drawn from AIMS (Activities to Integrate Mathematics and Science). One of the major activities of the project was for the groups to create a small science project or develop a math project to be put on display at the Science and Math Fair. The students submitted ideas for the projects that they would like to create for their science fair. The education interns worked with the science fair project. At Lake Taylor Middle School, nine projects were completed by groups of students during the 1997-1998 school year.

Another facet of the activities with the students was for them to receive assistance with any homework assignment. Parents attending the initial meeting felt that the home-work assistance should be included since their child would be remaining after school three days a week and would be arriving home later than usual. The first 30 minutes were spent for educational interns to help with homework when a group member was having difficulty completing an assignment in any of the academic subject areas.

During the 1998-1999 school year, all project students were encouraged to participate in the school's science fair. A special meeting for students and parents was held on November 17, 1998 to explain SRI (Scientific Research Investigation). Mrs. Arline, science lead teacher explained the process showing an example. Mrs. Brown, education coordinator, arranged with the principal that students could work on the SRI project and have them stored in school. In order to encourage students to participate in the SRI project, each intern was assigned a few students as a mentor. In spite of all these efforts, many students did not want to participate in the SRI project. This was because, even though the skills acquired during the development of the SRI projects were included in the

Standards of Learning standardized testing of all students at the end of the school year, only students enrolled in honors courses were required to develop SRI projects. Students were reluctant to engage in the work involved with the SRI projects if they were not a part of their regular class requirements. This situation provided a major challenge to all of the interns and coordinators.

(2) After-School Social Skill Activities

The BSW interns assisted the students' groups in formulating rules for the group. The students identified the consequences for those who chose not to adhere to the group rules. The BSW interns kept a daily journal to reflect their observations regarding: (a) which activities produced positive responses and which activities did not, (b) individual member responses, and (c) non-instructional factors affecting science/math classroom performance. The BSW interns observed the science and math classes of the group members and developed specific strategies to be utilized with the groups.

The BSW interns focused their intervention mainly on the following areas:

- Improvement of self-esteem
- Personal relationships
- Value clarification
- Strength of students
- Individual counseling

BSW interns helped students to know and understand one another better outside of the instructional environment. Self-esteem issues were addressed with the students through

role playing, writing activities, word games, scenarios for discussion. During this self-esteem activity, students had to stand and share why they felt they had good self-esteem. They appeared to be proud to share their thoughts about their high self-esteem. An activity on value clarification utilized conflict resolution skills as the students challenged each other. One teamwork activity focused on the strengths of each individual student. These involved students helping each other create an art piece (like a hanging calendar) which illustrated a specific strength and they had to explain it via oral presentation. Many of the activities selected have resulted in very positive responses. The BSW interns were right on target with the activities selected and the students demonstrated a positive response.

Several of the students had very specific issues to deal with which required individual counseling. The BSW interns worked individually with those students requiring counseling in the areas of poor impulse control, disrespect of others in group settings, inappropriate classroom behavior, and lack of respect for authority figures. Some teachers indicated that they had seen a positive change in these students. Students established a very good working relationship with the interns.

Under the guidance of the BSW interns, the students developed a student pledge and selected an appropriate logo as part of their group affirmation. The pledge was as follows:

> "I believe that Science and Math is for all Americans. The Science and Math for Everyone Project is for me and us. I will aim for new horizons. I will motivate my mind and wish to be heard. I will believe in myself and others. I will do my best to participate in the Project."

(2) Field Trips

Field trips were made to (1) the Virginia Air and Space Center, (2) the Science Museum of VA and the State Capitol Building, and (3) the Norfolk State University campus during the 1997-1998 school year.

The trip to the Virginia Air and Space Center of NASA Langley Research Center in Hampton was made on November 19, 1997. There were 30 students from Lake Taylor and 15 students from Northside, as well as 14 adults (teachers, interns, and coordinators). First, the whole group watched Space Freeze demonstration for 30 minutes. Demonstrations with liquid nitrogen on materials like flowers, sausages, plastics and metals made students really curious about the environment of outer space. They watched the Magic of Flight at the IMAX Theater and separated into three groups for the theme tours of Skyjacks to Satellites. After lunch, students engaged in hands-on, team-building, problem-solving activities to model a planetary colony on the fictional planet of Gilgamesh. For many of the students, the field trip to the Air and Space Center was a first time experience. An opportunity to participate in several hands-on experiments seemed to be most interesting. Some of the students have expressed a desire to duplicate some of those experiments.

A spring field trip was made to the Science Museum of VA and the State Capitol Building in Richmond on April 8, 1998. During the visit to the museum, students were able to have hands-on activities planned by the museum. Students were divided into small groups with interns enriching their knowledge in science. Also this trip allowed students an opportunity to see science exhibits displayed for their planned science fair exhibits at

each school site. The ideas gathered from the trip helped students prepare and display an improved science fair project. After lunch, students visited the State Capitol. They toured different rooms and learned about past presidents, governors, and other important persons.

There were two field trips to Norfolk State University, February 21 and 28, 1998, providing the students from each school with a hands-on experience working on the computer, perusing the Internet, setting up e-mail, and being a part of a science (chemistry and physics) workshop. In addition, students were instructed by one of the university computer lab directors and allowed opportunities to explore some interesting sites on the Internet. They also toured the campus and had lunch with university students in the student's dining hall.

During the 1998-1999 school year, field trips were made to (1) the Virginia Marine Science Museum in Virginia Beach, (2) the Jefferson Laboratory in Hampton, VA, and (3) the National Air and Space Museum in Washington, D.C.

On December 3, 1998, the students took a field trip to the Virginia Marine Science Museum in Virginia Beach from 8 a.m. to 4:00 p.m. Fifty-three students including some CHROME students explored different exhibits in small groups with the project interns. They enjoyed hand-on exhibits in different rooms. A special tour behind-the-scenes showed how the museum workers fed and took care of the animals. Students were amazed at how much work was involved in the museum. They viewed an interactive movie on salt water marshes. It was a new experience for students to select answers to the questions on the movie screen from their chair, and the results of the group were instantly shown on the screen. The students met the museum curator, Mr. Maylor White, who gave a presentation on careers working in a museum.

On January 26, 1999, a field trip was made to the Jefferson Laboratory in Hampton, VA. During the guided tour of the Lab, students answered a worksheet about the tour entitled "Jefferson Lab Treasure Hunt." The treasure hunt worksheet generally briefed the students on the main elements of the laboratory and named various instrumentations that were found there. Jefferson Lab's main focus is to study the atom and figure out the structure of the nucleus. They do this by using machines that are approximately 25 feet beneath the ground and a beam that starts in an electronic accelerator. The beam travels 186,000 miles per second, which is almost the speed of light. The beam moves by a changing of charges from negative to positive. This change occurs one and a half billion times per second and the beam only works when in temperature 456 degree below zero.

After the tour, students went inside where a tour teacher was waiting to teach our group about liquid nitrogen. During this section she showed the effects of liquid nitrogen on different materials such as flowers, a ping pong ball, a racket ball, a rubber ball and balloons. Students also highly enjoyed a hands-on experiment with tennis balls that represented the electron movement in the accelerator. The field trip was very productive and enjoyed.

On March 23, 1999, thirty-six students visited the National Air and Space Museum in Washington D. C., leaving the school at 5:15 a.m. and coming back to school at 8:30 p.m. At the museum, students were divided into small groups for general viewing but divided into two groups for a guided tour of the exhibits on African Americans in Air and Space History. Students noted how early African American pilots started their careers in other countries because of discrimination at home and how they integrated in the main stream of American scientific community. The achievements of African American pilots and

astronauts were impressive to students. At the IMAX theater, two movies were watched. "Cosmic Voyage" gave students the unique opportunity to experience the wonder of the cosmos and explore humanity's true place in the vast continuum of nature. The "To Fly" show provided a special experience of the aerial tour over the beautiful Arizona landscape from a balloon.

(B) Family Intervention Measures

Family intervention was incorporated in the project on the premise that parental roles and family environment are important ingredients for student success in academics, especially in science and math. MSW interns provided most family support to parents of the project participants. A Family Intervention Need Assessment was conducted by MSW interns and provided initial contact to build relationship with families. Later the Parent Survey in 1997 or Family Assessment Profile in 1998 was conducted to collect information on student's school activities, home environment, family relationships and parental involvement in the student's school. MSW interns interviewed the parents of both experimental groups in Lake Taylor Middle School and Northside Middle School during the 1997-98 school year, and both seventh and eighth grade project students' parents of Lake Taylor during the 1998-99 school year. More time and effort were put into this task than initially anticipated, therefore, completing the surveys went beyond the originally planned date. The interns made several home visits. For some, addresses were not correct or some parents failed to keep the appointment.

From the survey we found that many of the parents wanted to know more about the Science and Math for Everyone Project. The workshops were to give parents an opportunity to ask questions about the project and to get a better understanding of their children's involvement in the project. The workshops were open to all parents of the participating students because of voluntary participation and lack of participation from Experimental Group I. The letters and flyers were sent to parents and personal telephone calls were made.

Parent workshops were conducted twice during the second semester of 1997-98 school year at Norfolk State University. Although much effort was made, only one attended the first workshop and three at the second workshop for various reasons. (The parents expressed that it was very difficult to get out in the evening after they had worked all day. They suggested that the meetings might be on a PTA meeting night or on parent-teacher conference day at each school).

At both workshops, the DSW intern presented purpose, goals, and objectives of the Science and Math for Everyone Project. The MSW interns facilitated the remainder of the workshop. Parents wanted to have an itinerary/schedule of the project activities and to have feedback as to what their child was doing and what they could do to help. Although the attendance was minimal, the discussion was meaningful.

During the 1998-99 school year, on parent-teacher conference day (October 12,1998), MSW interns met parents from their group individually because many parents came on their own schedule to meet teachers, although we announced the time to meet. There were 11 parents and/or grandparents of the seventh grade participants. The project purposes and activities were explained to them, and parents asked several questions. Among nine

families who responded to the Family Need Assessment Survey instrument, six of them indicated a need for parent training concerning how to plan a child's education with the school. Other areas of their needs were in learning how to be more involved in their child's education, encouraging and motivating the child's special interests, and enhancing family relationships with their children.

A parent workshop on November 17, 1998 was about the science fair project using the Scientific Research Investigation (SRI). Mrs. Arline, science department head teacher, explained the whole process of SRI to the parents. Mrs. Arline encouraged parents that Scientific Research Investigation was not difficult, using an experimental exercise of density computation and that they could help motivate their children to do a project. There were over twenty parents and students in attendance.

The monthly parent workshop resumed on January 26, 1999. The workshops offered parents information regarding college preparation and financial aid. We discussed the importance of developing good study skills as seventh and eighth graders and also talked about how strengthening these skills can improve students' academic performance in high school. Students are encouraged to maintain excellent academics and to get involved in community activities to mold them into eligible candidates for college. Mr. Todd Fritz, guest speaker, answered questions about the PSAT and SAT. As a guidance counselor for a local high school, Mr. Fritz suggested that they take the PSAT as a study guide for the SAT and to take the SAT after the student has completed geometry. Parents were also given information about the Virginia Pre-Paid Education Program that is offered by the Commonwealth of Virginia, which allows parents to prepay tomorrow's tuition at today's price.

The parents' workshop in February was scheduled for Stress Management. Due to an inclement weather conditions, only interns showed up without any parents.

The March workshop was conducted on "Bridging the Communication Gap with Your Adolescent," starting with games and giving out Walkman radios and telephone gift certificates as prizes in tune with the communication topic. Mrs. Shearin, DSW intern and the school social worker, explained to the parents the Washington, D.C. field trip planned on April 23rd, 1999 and answered questions.

The workshop proceeded with describing parenting basic assumptions and then turned to the definition of adolescence, changes in adolescent's development (psychological, social and biological perspectives), and concluded with brainstorming and possible solutions. The parents were very active in the workshop, which was encouraged by the style of presentation used by the facilitator. All parents were asked what type of adolescent they were and it was discovered that many of the parents of the children had attended middle school together. Many of the teachers had taught these mothers and fathers before and were now teaching their children. The students were amazed to find out what type of adolescents their parents were, especially hearing from other parents. A handout was given to every parent which included "21 Ways to Tame Your Adolescent" and an article entitles "Living with Teens."

Goal #2: Design and implement a research scheme to test the efficacy of the above listed educational/family interventions.

This would include quantitative (and some qualitative) assessment of outcomes, based on an experimental research design with maximum control of extraneous variables.

As stated earlier, the true experimental research scheme originally designed had to be compromised to accommodate the reality of voluntary participation of qualified students instead of random selection and random assignment, and high and irregular participation mortality. Within such constraints, however, the modified design assimilated a quasi-experimental design retaining a control group (comparison group) and pre-post tests with optimal controls of other variables as much as possible.

(A) Educational Outcome Measures

As outcome measures, grades in science and math, Criterion Reference Test results in science and math, and Standard of Learning Test results were used. None of the outcome measures, to a great disappointment, indicated statistically significant differences to demonstrate a net impact of interventions. During the 1997-98 school year, the control group seemed to have slightly higher scores in science and math than the experimental group, perhaps because many academically superior students from Northside Middle School had been already drawn to the school's own projects. During the 1998-1999 school year, there seemed to be no clear pattern. Although there was no statistically significant difference, the experimental group scored higher than the control group in the 4th quarter grades in science and math. With the Criterion Reference Test, the experimental group did better in science and the control group did better in math. With the Standard of Learning Test, the control group had higher mean scores in both science and math than the experimental group. However, it is notable that, while both groups are below the state average, more students in the experimental group passed the Standard of Learning Test in

science (60%) and math (45%) than the control group (science, 38%; math, 29%) and the differences appeared to be significant.

Table 8
Comparison between Experimental and Control Groups

	Exp. Group	Control Group	t	df	sig
1997-1999 School Year					
Fourth Quarter Science Grade	2.17	2.39	-.80	54	.43
Fourth Quarter Math Grade	2.57	3.00	-1.69	54	.10
1998-1999 School Year					
Fourth Quarter Science Grade	2.16	1.16	.68	67	.50
Fourth Quarter Math Grade	2.60	2.27	.94	66	.35
Criterion Reference Test,					
Science 6/99	47.62	41.00	1.25	65	.22
Math 6/99	45.48	49.00	-.62	56	.54
Standard of Learning Test					
Science 6/99	392.40	414.38	-.74	26	.47
Math 6/99	392.65	398.14	-.29	25	.77

SOL Passing Rate in Percent	Exp. Group	Cont. Group	Statewide*
Science	60%	38%	78%
Math	45%	29%	60%

*Virginian-Pilot, July 29, 1999, page A8. Citywide or school information is not available at this time. Goal for each school is 70%.

(B) Parental Support Outcome Measures

Parental support is one of the independent variables assumed to affect students' academic performance in science and math. During 1997-98 school year, parental supports were viewed as helping students with homework, time for studying at home, parents' school involvement, and attendance of parental workshops. There was no

significant relationship between parental support and the outcome measures, even though the experimental group fared slightly better than the control group. During 1998-99 school year, parent workshop attendance and their contact with interns and staff were considered as well, but there was no statistically significant difference between the group with parent's support and the group without parent's support. Interestingly, the group with parents' support seemed to have lower self-esteem. Obviously, the group with parents' support had higher attendance.

Table 9
Comparison between Groups with or without Parental Support

	With P Sup.	Without P Sup.	t	df	sig
1998-1999 School Year					
4th Q. Science Grade	2.60	2.05	-1.36	49	.18
4th Q. Math Grade	2.90	2.52	.84	48	.41
CRT Science (%) in June	47.40	47.18	.04	47	.97
Self-Esteem in April	66.50	73.44	-1.98	33	.07
Attendance of Program	46.0	28.9	3.50	50	.00

When a comparison was made between male and female students on those measures, there was no statistically significant difference. The experimental group was divided into two subgroups: those who attended the after-school program above the median and those below the median. There were no statistically significant differences between them in performance in science and math. However, during the 1997-1998 school year, those who attended the after-school program who were above the median had received 20 percentile lower in the Literary Passport Test scores (science 44.3; math 43.15) than those who attended less after-school program sessions (science 64.3; math 63.5). It

seemed that those who had not done well in science and math enjoyed the after-school program and attended the program more eagerly than those who did well in the first place. Perhaps it might be explained that the latter might have seen little benefits of such an after-school program, or those who had not done well might have seen the opportunity to grow.

Goal #3: Demonstrate significantly improved science and math performance for participating students including:

- **An average 20% increase in science and math scores on standardized tests during the project period;**
- **A 15% increase in the number of program participants who choose or are selected for special science and math programs; and**
- **A 0.5 GPA improvement in school grades earned by participating students.**

(A) Grades, Higher Math, and CRT

For comparison of pre-test and post-test of standardized tests, Criterion Reference Test in science were used. Because the scores of Criterion Reference Test in math in December 1998 were not available for administrative reasons, comparison of math scores could not be performed. The mean of Criterion Reference Test in science of experimental group increased from 37.41 to 45.95 which indicated 8.54 increase (22.8%) with statistical significance. This increase of the science score was more than the set goal (20%). However, the control group improved (6.23; 19.1%) as well with statistical significance. Both the experimental group (t=-3.63; df=40; sig=.01) and the control group (t=-2.17; df=12; sig=.05) improved substantially and the difference between the two groups'

improvement (.37%) was practically negligible. Thus, the net impact in the experimental group was questionable, and it could be due to some extraneous variances such as maturation or natural improvement.

In the math program, some of the seventh graders would take an Algebra course in the eighth grade. Nine out of 32 students (28.1%) in the experimental group would take Algebra next year while four out of 14 students (28.6%) in control group would take Algebra next year. The project did exceed the goal of 15% increase in the number of program participants who were selected for higher math program, but again there was no difference between the two groups.

There were no statistically significant differences in the 1st quarter and 4th quarter grades in science and math of the experimental group during both school years. (During the 1997-1998 school year, the math grades of the control group were improved (t=-2.37; df=25; sig=.03) with statistical significance). When the grades were compared, math grades generally increased while science grades decreased from the 1st quarter to 4th quarter in both groups. This might be explained that math courses might be cumulative by steps, while science courses might have introduced harder new topics in the later quarter. When the science and math grades of seventh graders and eighth graders were examined for the1998-99 school year, only the seventh graders improved 0.74 in math grade. The goal of a 0.5 grade improvement in grades was partially met in seventh grade math.

Table 10

Comparison between Pretest and Posttest

	1st Quarter	4th Quarter	t	df	sig
1997-1998 School Year					
Experimental Group					
Science Grade	2.59	2.24	1.47	28	.15
Math Grade	2.50	2.64	-.72	27	.47
Control Group					
Science Grade	2.69	2.39	1.16	25	.26
Math Grade	2.65	3.00	-2.37	25	.03
1998-1999 School Year					
Experimental Group					
Science Grade	2.18	2.16	-.12	50	.91
Math Grade	2.29	2.58	1.61	47	.11
CRT Science (%)	37.41	45.95	-3.63	40	.01
Control Group					
Science Grade	1.72	1.94	.78	17	.45
Math Grade	2.33	2.28	-.20	17	.84
CRT Science (%)	32.54	38.77	-2.17	12	.05
Experimental Group					
7th Graders					
Science Grade	2.26	2.42	.80	30	.43
Math Grade	2.07	2.81	3.58	30	.00
CRT Science (%)	43.57	50.83	-2.07	22	.05
8th Graders					
Science Grade	2.05	1.75	-1.06	19	.31
Math Grade	2.71	2.18	-2.17	16	.05
CRT Science (%)	29.56	39.72	-3.41	17	.00
Control Group					
7th Graders					
Science Grade	1.70	2.00	.71	9	.50
Math Grade	2.00	2.30	1.00	9	.31
CRT Science (%)	35.50	37.33	-.52	5	.62
8th Graders					
Science Grade	1.75	1.88	.31	7	.76
Math Grade	2.75	2.25	-1.08	7	.32
CRT Science (%)	30.00	40.00	-2.45	6	.05

Almost all CRT science scores (%) increased with statistical significance from 1st quarter to 4th quarter of the 1998-99 school year for both the experimental group and control group, which indicated that all students attained some scientific knowledge over the school year.

Table 11

Comparison of Differences (from 1st to 4th Quarter)
of CRT Science (%) between Experiment and Control Group

	Experi. Group		Control Group	
	Difference	Sig.	Difference	Sig.
7th Graders	7.26	.05	1.83	.62
8th Graders	10.16	.00	10.00	.05
Total	8.54	.01	6.23	.05

However, careful analysis further showed that attainment rate of the experimental group was significantly higher than the control group as shown in Table 11 above. The data seemed to imply that students in the project, especially seventh graders, were learning faster than other students.

(B) Self Concept

Since one's self concept or self-esteem has been known to be closely associated with his/her behavior and attitudes, including academic performance, an improvement of self concept was added to the original project goals. To assess the level and change of their self concept, the Piers-Harris Children's Self Concept Scale was administered to the

project students in September 1998. Twenty-three seventh grade students and ten eight grade students participated in the testing. The mean of T-score of the seventh grade students was 66.00 with standard deviation 11.70 and the eighth grade students was 67.60 with standard deviation 8.22. In April 1999, twenty-one seventh graders and fourteen eighth graders took the test. The mean of T-score for seventh grade students was 70.33 with standard deviation 10.48 and the mean of T-score for eighth graders was 73.71 with standard deviation 12.48.

There were nineteen seventh graders and eight eighth graders who took both tests. The mean difference between these two tests was statistically significant for both seventh graders (t=2.58; df=17; sig=.02) and eighth graders (t=3.49; df=6; sig=.01). Even though such a remarkable improvement could not be exclusively attributed to the project activities because of the lack of data from the control group, students in the project significantly and universally improved their self-concept during the project period.

Table 12
The Mean Difference between Pre- and Post-tests of
Piers-Harris Children's Self Concept Scale

	Sept. 1998	April 1999	t	df	sig
7th Graders	65.28	70.11	2.58	17	.02
8th Graders	67.00	75.71	3.49	6	.01
Total	65.76	71.68	3.87	24	.00

Goal #4: Develop teacher training strategies

One of the less tangible yet important facets of this project was to train teachers how to effectively deal with minority, disadvantaged, and female students in math and

science class settings. In order to help achieve this goal, formal workshops were provided to the seventh grade science and math teachers during the 1997-1998 school year and also in 1998-1999 school year, using the school in-service time to serve more teachers and counselors.

A half-day training workshop was conducted for the seventh grade science and math teachers on how to work with minority and disadvantaged students on October 29, 1997 at Norfolk State University. Eleven teachers and one counselor participated with a $100 stipend and .3 continuing education credit (CEU) from Norfolk State University.

The keynote speaker was Dr. Herman Clark, Assistant to the Superintendent of Norfolk Public School System and former principal of Bowling Park Elementary School. He talked about "Diversity in School" explaining how perception made people behave differently and engage in discriminatory actions. He also showed how perceptions of students and parents changed over time. Dr. Martha Sawyer from Norfolk State University brought several resource materials. She talked about "Cultural Sensitivity" including how teachers could help minority students.

On January 21, 1999, Dr. James M. Patton from the College of William & Mary presented a seminar, titled, "Cultural Diversity, Education, Ethics, and You" at Lake Taylor. The participants were teachers, administrators, project staff, and interns. He introduced information regarding values and ethnocentricity which he presented through a socio-cultural-political lens. Dr. Patton offered empirical data to support his platform. He was quite an entertaining and dynamic speaker who spoke of warring adolescent souls. This was a thought-provoking and insightful presentation. As participants were challenged to confront their own prejudices and biases, all were encouraged to mend their own

cultural fences, to build and to establish common ground. To embrace and recognize differences, he stressed also that the sameness among us should be celebrated. As the face of America changes, cultural diversity should be welcomed. Each ethnic group should bring a necessary and unique gift to the wholeness of life.

In addition to these formal presentations, the social work supervisor and the education coordinator helped lead teachers and other teachers on an ongoing basis to better sensitize about cultural and socioeconomic factors that may influence classroom performance, and assisted with changing teacher expectations for disabled, disadvantaged and minority students.

Goal #5: Disseminate the validated intervention model for replication

The Collaborative Model of project was presented at the Fifth National HBCU Faculty Development Symposium in Miami on October 15-18, 1998. Another presentation on Social Work Intervention in Enhancing Science and Math Achivement of Middle School Minority Students will be made at the School Social Work Conference in Las Vegas on March 12-14, 2000 sponsored by the School Social Work Association of America and the Western Alliance of School Social Workers. A proposal for a presentation at CSWE Annual Program Meeting in New York on February 25-18, 2000 was submitted.

This final report represents an official publication with methodology and outcomes of the project with implications and recommendations. This will serve as an intervention model with all its limited yet empirical data and history of logistical arrangement. This documented experience would help the similar modified intervention project be replicated

elsewhere for comparative and/or confirmation purposes. This document will be submitted to the NASA Langley Research Center Office of Education, Norfolk Public Schools Administration, Northside and Lake Taylor Middle Schools, Norfolk State University Office of Research, School of Social Work, School of Education, and any other education/research institutions interested in this type of project. In addition, the project coordinator will be available for formal or informal consultation to any education service providers and academic researchers.

Goal #6: Secure funding for continuation and/or expansion of the project

Some attempts were made for additional support to extend and/or expand the same or modified strategies, optimally capitalizing project experiences and network resources. An informal discussion was initiated with the NASA Office of Education to assess the feasibility of modified extension of the project in terms of specific grade level science projects around the Lake Taylor at Lake Taylor Middle School. But this idea was not pursued further largely due to the strained budget forecast for the NASA Langley Research Center next fiscal year. No other funding sources have been identified early enough to pursue this goal in a timely manner. Attempts have been made not to lose the momentum and motivation created by this project in the past two years. We are planing to initiate a small scale after school program with an undergraduate education student who needs volunteer time for student teaching and a social work student who could take field practicum at the Lake Taylor Middle School. At this point no formal grant application would likely be made in view of major personnel changes at both schools of Social Work and Education of Norfolk State University. Students and teachers will, however, continue

to utilize and benefit from great enthusiasm and various resources generated from this project, such as the computers, software programs, and other tools, that are technically on an indefinite loan to Lake Taylor Middle School. All participants were also encouraged to participate in the Cooperating Hampton Roads Organizations for Minorities in Engineering (CHROME) next year.

V. Evaluation and Summary

(A) Students' Evaluation

Besides meeting stated goals, evaluation and satisfaction level of students as recipients of project intervention may be very important indicators of project success. At the end of the first year, students (n=23) at Lake Taylor Middle School evaluated the project. Generally, their responses were positive and they felt that they became more comfortable with and learned more science and math. They enjoyed the field trips and hands-on activities. The results of the questionnaire are as follows (students answered more than one item for each question):

"What was the purpose of the Science and Math for Everyone Project?"

1. To learn more about science and math and improve science grades (18; 78.3%)
2. To express your feelings and feel good about yourself (11; 47.8%)
3. To get into a good college and get a good job (9; 39.1%)
4. To get extra help in science and math (3; 13.0%)

"What did you like most about the after school program?"

1. The field trips and hands-on activities (23; 100.0%)
2. The snack (23; 100.0%)
3. The self-esteem groups and related activities (18; 78.3%)
4. Learning to cope better with friends (11; 47.8%)

"What can be done to make the project better next year?"

1. It is okay the way it is now (18; 78.3%)
2. Do more hands on projects (10; 43.5%)
3. Have more field trips (9; 39.1%)
4. Teach the science materials needed for the 7th grade (8; 34.8%)
5. Do more things with math (5; 21.7%)

"What do you feel you accomplished in the program this year?"

1. Learned more about science (11; 47.8%)
2. Met new friends and learned new things (10; 43.5%)
3. Being able to say what is on my mind without offending anyone (6; 26.1%)
4. I learned to do integers before my class learned (5; 21.7%)
5. Got a better feeling about science and math than before (3; 13.0%)

"What were some of your frustrations?"

1. Students using the club just to go on field trips (11; 47.8%)
2. New interns came in and made us do things we did not want to do (4; 17.4%)
3. Sometimes boring (3; 13.0%)
4. One intern showed favoritism which was not appropriate (3; 13.0%)

Students recommended to have more hands-on activities in science and math; to make the science and math information more relevant to their class work; to have guest speakers and/or visit NASA Langley; and visit other local colleges.

In April 1999 students were asked to evaluate the program and eighteen seventh grade and twelve eighth grade students participated. There were 10 statements with Likert Scale responses with strongly agree, agree, somewhat agree, disagree, and strongly disagree and five open-ended questions. A summary of the results indicated overall students' satisfaction with activities of the project when "somewhat agree" was included in agreeing category. A large majority (76.6%) strongly agreed or agreed that the purpose of project is clear but only a half agreed that activities clarified purpose. Twenty-one students (70%) agreed that field trips were relevant and self-esteem activities were helpful (66.7%). They thought that educational activities were helpful in general (56.7%) but a half or less of students thought that science and math activities were helpful. A large majority disagreed that

there were too many science or math activities. Interestingly the seventh graders' responses were more positive than the eighth graders when analysis was done separately. Reasons for such obvious differences in responses may be attributed to: first time enthusiasm of the seventh graders; better connections between project work and classroom work for seventh graders than eighth graders; less challenge to eighth graders who participated as seventh graders; and/or the eighth graders' more serious task that had to be done as opposed to voluntary activities with more fun and games in the seventh grade.

Students expressed that the positive things they liked most about the project were field trips (n=20; 66.7%) and games and activities (n=13; 43.3%). Twelve students (40.0%) indicated nothing they liked least, although some students indicated sharing feeling with others, science activities, and meeting too often. One half of them expressed there were no frustrations with the project. The responses to things that would make the activities of the project better were various such as more science activities or more math activities. Students indicated benefits in academic and social skills. The benefits they got from participating in this project were stated differently between seventh grade and eighth grade students. Among seventh graders, six felt that the benefits were very educational and five students specifically identified science as the subject they benefited from the most. They indicated that they were able to comprehend the SRI process (scientific research investigation) much sooner than other students in their science classes. Seven students noted that they have become more self-confident while five students felt more comfortable sharing their feelings. Three students made new friends as a result of participating in the project. Only one

student noted that there were no benefits gained in participating in the project. Among eighth grade students felt that they were helped to prepare for future educational choices. Three students noted that they have seen improvement in their math comprehension and grades. Two students mentioned that field trips were beneficial. Three students indicated that their self-esteem has improved from their participation in the project while one student identified meeting new friends was great and one indicated that the project has motivated them. Only one student did not respond to the question.

Table 13
Students' Evaluation of the Project in April 1999 (n=30)

Statements	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
Purpose of Project clear	20	3	4	3	0
Activities clarified purpose	11	4	9	4	2
Self-esteem activities helped	16	4	3	4	3
Educational activities helpful	10	7	6	4	3
Activities very informative	7	8	5	6	4
Science activities were helpful	8	7	4	7	4
Too much science*	3	1	0	10	4
Math activities were helpful	7	6	5	5	7
Too much math	5	1	1	8	15
Field trips were relevant	11	10	4	4	1

* Two students did not respond.

A couple of participants shared their experiences at the Year End Recognition Ceremony which was held on April 23, 1999 at Norfolk State University. One of the seventh graders shared the following:

> The Science and Math for Everyone Project has been a great experience for me. I learned a lot from the games and other activities that were performed. The activities we played and learned from, I know, will help me in the long run such as math graphs, measuring and math counts. Also with science hypothesis, producers, and scientific charts, I really do/did enjoy this program and I think it is a good program for upcoming seventh and eighth graders. The program helped them build a positive self-concept. I know that anyone that was failing at the beginning is now passing because our after-school program teachers are doing and did a good job of teaching us. I am very happy that I was accepted and hope to be accepted next year.
> Thank you, thank you, thank you!

One of the eighth grade students wrote:

> The Science and Math Project was an influence to me. The project has influenced me because of some of the social activities and social work. For instance, it enhanced my self-esteem. One day when we were talking about our ideas on role models and I could talk about my mom, dad, and sisters as my role model. I like math and I think the project could have been improved by providing more math related activities, instead of a lot of science.
>
> The project has shown me how I can be more open and assertive and to have a high self-esteem for myself. It also taught me that sometimes, a person can't always do things alone and it's nothing wrong with asking for help, no matter how stupid the question or task may be. Also that there are teachers and other people that are willing to go out of the way to help you, if you really want the help. Last, the project has also shown me how to express myself and to talk to others about something if I'm sad or if I just need someone to talk to. Thanks for your support when I needed it, especially, my family.

(B) Outcomes and Discussions

Overall findings from this project may be summarized with following discussions for better understanding and practical implications:

1. Research design had to be modified from the original plan of classical experiment to quasi-experimental design due to inability to randomly select and assign from qualified student pool and also to due to high mortality rate and irregular attendance patterns in two schools during the first year (1997-98 school year). Also due to significantly different participation patterns as well as demographic and socioeconomic contrast between two schools, the second year (1998-99 school year) project site had to be confined to one school on the basis of need, namely, Lake Taylor, using seventh and eighth grade students.

The modified project retained the composition of pre- and post-tests and experimental-control groups, but some incomplete data, small sample sizes in some cases, lack of control of many extraneous variables did make, overall, outcome measures less reliable and comparisons less valid. Therefore all outcome findings should be treated as rough estimates of an exploratory demonstration project.

2. Educational interventions were implemented with eight undergraduate interns in order to strengthen interest and performance in science and math of total 84 students (23 from Lake Taylor and eight from Northside for 1997-97; 32 from seventh grade and 21 from eighth grade at Lake Taylor for 1998-99). The interventions comprised of (1) after-school academic activities three days a week, which included academic skill development, computer usage, small science projects, help with homework; (2) social skill activities in the areas of self-esteem, personal relationships, value clarification, strengths of individual students, and individual counseling; and (3) field trips to six local and regional science museums for observations and hands-on experiences.

In order to see a great change in performance, three-day after-school activities per week might not have been enough, but at the same time it might have taxed too much on their time for other activities. There were some ongoing concerns in regard to the quality of interns' services. At times there were some serious problems in staffing some education intern positions because of their time and duty conflicts. Also gradual phased-in procurement of computer equipment and inability to install additional phone lines for Internet connections might have been serious handicaps to student activities.

Nevertheless, the project invested enough time and efforts to provide opportunities to all participants, particularly to some students who had not done well in science and math. They developed interests in science and math and improved their social behavior and study habit. It seemed that those with low grades attended the project activities more and took advantages of them.

3. Family interventions were implemented by four graduate social work interns in order to assess parental needs, help parents understand about the project, optimize parental involvement in child academic progress, and improve parenting skills for teens. Activities included family need assessment survey, home visits, interviews, parental conferences, and later monthly parent-child workshops. Obviously parents responded better when interns showed serious commitment to help students and build relationship with students. We could observe differences among groups when interns were stable and responsible, whose qualities were not always easy to find.

MSW students faced considerable difficulties to work with families, because students and families associated social workers as "welfare workers," eligibility workers, or helping

people who had problems. They had to be assured that they did not have problems and school social workers would enhance their school achievement. Although parents thought the education was important, it was difficult to motivate parents of middle school students to be involved with school. Some parents might have thought that the middle school child was old enough to do on their own, or they might be too tired after their full-time work. Even though every effort was made to increase parental participation in workshops and other activities, their attendance rate was generally low and sporadic.

Partially because of these resistance, input of MSW interns for family intervention were rather limited and their outreach efforts were minimal, even with on site supervision. The MSW interns also needed to learn other functions of school social work. The DSW intern was an employee of the school system and also supervised MSW interns for the project. Her dual roles had definite advantages and certain disadvantages as well. Because of the somewhat questionable quantity and quality of family intervention services, their impact could not be expected to be great.

4. Training workshops were provided to 12 science and math teachers and counselor for 1997-98 school year, and 43 teachers, administrators, project staff, and interns for 1998-99 school year. In addition to informal ongoing consultations and assistance, these formal workshops were given to train teachers how to effectively deal with minority, disadvantaged, and female students in math and science instructional environment. The training strategy was to enhance their understanding with cultural sensitivity, ethnocentricity and diversity, socioeconomic factors, changing attitudes and expectations and their impact on students learning behavior. There seemed to be no good time for

teachers to come for the workshop. It was difficult to find dates and time with school administrators. No formal evaluation was conducted on the teacher training workshops but verbal comments indicated that they attained new information and insight for their effective teaching.

5. Educational outcome measures were relied on objective criteria which school provided for all students in order to control the reactive effect of control group when they were known on their control group status. Such object measures were grades in science and math, Criterion Reference Test (CRT) in science and math, GPA, selection for higher math, and Standard of Learning (SOL) tests. There were important indications or evidences that the project indeed had positive impact on student performance in science and math in terms of partially meeting the goals of an average 20% increase in math. Also the experimental group had a higher passing rate in the SOL Test in science and math than the control group. The former had not only higher CRT science percentages (in case 7^{th} graders), but also had higher improvement rates than the latter.

However, when differences between the experimental group and the control group were compared to other measures, the net impact of interventions was not clear. In a few outcome measures, there were some mixed results suggesting that findings were inconclusive.

A number of explanations may be possible for those discrepancies. Comparisons between the experimental and control groups and also comparisons between the two subgroups by participation level in the program seemed to indicate that those students who had had low scores in science and math initially might have found interests and benefits of

the project activities, and thus stayed in the program. Or the better performing students might have lost their interest in the program and thus dropped out of the program. In fact casual observations and informal interviews seem to support both assumptions.

6. Parental support outcomes did not show any evidence that parental support such as helping students with homework, time for studying at home, parents' school involvement, and attendance of parental workshops had a significant impact on academic outcome measures of students among project participants.

As stated above, parental involvement and participation were minimal and thus the finding of no relation appear to be irrelevant or invalid. It seemed to work better, however, when students became interested in topics of parent workshops and came with their parents. It seemed to be important that the workshop was interactive including games and gave incentives or prizes for their participation.

7. Self concept measure assessed by the Piers-Harris Children's Self Concept Scale clearly indicated that both seventh graders and eighth graders improved their self esteem during the 1998-99 school year with statistical significance.

Even though a lack of control group data would not allow any reliable assessment of net impact of the project on their self concept, it was notable that students who participated in the project activities made significant improvement of their self concept as a whole.

8. Student evaluation, along with personal testimonies and casual observations, definitely indicated that students who participated in the project were well aware of the

purpose of the project, were satisfied with its practical activities, and got substantive helps for math and science subjects and for self esteem. They felt that the project influenced their feelings about science and math and for their future career concerns.

9. An intervention model was produced through this project experience for a replication or further development of similar educational intervention strategy for special student population. The model was documented in this final report, along with three academic journal articles, six progress reports, three videotapes, various forms and pictures.

10. An innovative "LAKE Project" was being developed as a partial spin-off of this project under the able leadership of Pam Arline, science chairman of Lake Taylor Middle School. The term "LAKE" is an anachronym which stands for "Linking Achievement to Kinesthetic Education," symbolizing their untapped instructional and research assets on the site, Lake Taylor and Herbert. This project is a comprehensive three year, grade-specific course of environmental study program using two lakes. The program has been adopted by all subject areas and is being developed into interdisciplinary units at all grade levels.

Each grade, six, seven, and eighth, would focus on a specific aspect of environmental study as it applied to the State Standards of Learning. The students will study different aspects of the lakes each year. Sixth graders will focus their learning on mapping and physical properties of the lakes. Seventh graders will identify and classify the flora and fauna of the lakes and surrounding areas. Population studies will also be completed by the seventh graders based on methods

taught in "Lab is Outside." The eighth grade students will study the chemical properties of the two lakes and compare these properties to national water standards. All data collected by each grade level will be placed in a data bank for future retrieval and comparison studies to identify changes in the ecological environment.

This is a very innovative and promising educational project for optimal learning experiences for all students, and the program plans are in great need of external support as soon as possible for successful implementation and continuous development.

In view of these ten outcomes this project produced, there were some unique and innovative features. It was a joint effort with the partnership of many educational and research institutions such as Norfolk State University, Norfolk Public Schools system, NASA Office of Education, and other collaborative groups such as CHROME. It offered combined interventions from the School of Social Work and the School of Education of the University, with a multi-tier approach, deploying faculty, doctoral, graduate and undergraduate students. It was a research project, while delivering real services to target students. As its target population, it addressed the needs of a special population who have been traditionally underserved in math and science and thus under-represented in science, engineering, and technology fields. It provided an early intervention for pre-college preparation, namely, seventh and eighth graders in middle schools.

VI. Recommendations

In view of above findings and interpretations, we make following recommendations for serious consideration and possible future implementation.

1. **Use a longitudinal study design**

Since a random selection and random assignment of participants to treatment and control groups are realistically not feasible in a public school setting, a longitudinal design (instead of a classical or quasi-experimental design) should be adopted, using all other students as a control group. This approach will allow timely monitoring of students' academic progresses and other performance changes in certain common measures in comparison to those of other students.

2. **Make it a more extensive intervention**

This type of project requires an extensive preparatory work prior to actual delivery of educational services to target students. Such preparations should include administrative clearance and linkage development, staff hiring and training, development of program materials, collection of preliminary data of target students and their families, and other detailed logistical arrangements. Also a longitudinal approach needs an observation period long enough to establish stable patterns, if any. Therefore a project should be extended at least for three years with one semester for the developmental stage and the rest for implementation, preferably from second semester of six grade to second semester of eighth grade.

3. **Deliver more intensive intervention input**

To make a tangible impact on students interest and performance in science and math, more substantive, systematic, and diversified assistance should be delivered to participants with some stable structure and activities as small clubs. This means that more time, energy, and talents should be invested in the teaching and learning activities as suggested in items #6 and #7 below.

4. **Broaden educational focus**

The middle school years are an important stage in life for early adolescents to dream about their future with pre-career developmental tasks. At this stage, it is momentous to develop and cultivate keen interests and wild imaginations, proper attitudes and aptitudes, positive self esteem and self confidence, efficient study habits, supportive study environment, etc., inducing and motivating them to do better in science, math, and other "hard" subjects. This can be done by helping them to appreciate and enjoy "fun things" in life and by exposing them early to "big surprises" of the world we live in. Therefore the project should focus not so much on the narrow and immediate improvement in grades, GPA, SOL, and other objective measures in science and math, as on broad and generic changes of students' interests and inclination for those fields requiring advanced science and math subjects.

5. **Make program goals appropriate to the target population**

Target population, namely, ethnic minority, female, disabled and economically disadvantageous students are generally underachievers in science and math. However, the notion of "late-bloomers" or "hidden genius" should be always entertained. Their hidden

or repressed talents and their undeveloped or unrecognized potentials should be cultivated and enlightened through consistent encouragement and rewards. Realistically, therefore, most activity objectives and format should be more remedial and supplemental in nature with individual attention rather than those of gifted or advanced programs. Also cultural diversity and individual variances should be carefully recognized, sensitized, and adapted in all program activities.

6. **Optimize service personnel resources**

Persons who deliver educational services in the project, whether for individual tutoring, after-school activities, field trips or science fairs, should be very familiar with students, subject matters, and project goals. In addition, they should be likable, dedicated, and flexible individuals who can actively engage students in given tasks. Instead of exclusively using college student interns who often have conflicting agendas, some qualified part-time persons with teacher certificates and/or current teachers of the project site or of other schools should be utilized optimally on a part-time contractual arrangement with sufficient monetary compensation. They should be deployed perhaps two or three afternoons a week and more on weekends with a maximal quality control and accountability. This approach should be more cost-effective than using many student interns with stipends.

7. **Develop student-centered activities**

To maximize student interests and participation, activities should be innovative and non-conventional, more or less based on students' own interests and initiatives, not just on grade-related and course-specific. According to needs and interest expressed by students, such student-centered activities should include, among other things, more computer

utilization, especially Internet, field trips, practical problem-solving tasks, organized events such as small group projects, science and math fairs, hands-on demonstration, competitive/non-competitive prize awards, newsletter publications, more snacks and socialization opportunities. Major tenets and advantages of the student-centered activities should be to engage them in an active learning process which is really interesting and meaningful to them, or to use one student's phrase, "having lots of fun while learning things real cool."

8. **Replicate this project with some modifications**

Many valuable experiences and lessons have been accrued from this project and excitement and momentum have been built among students and teachers who participated in the project. These intangible assets as well as some leftover equipment and materials should be utilized to further students' benefits at the same site or at different location(s). With some modifications noted above, this project should be repeated or duplicated with additional funds from NASA Langley Research Center Office of Education or other Federal or state agencies which promote the same mission for minority human resource development in science, engineering, research and technology.

VII. Attachments

(A)Grant Award Document

RESEARCH GRANT

1. GRANT/COOPERATIVE AGREEMENT NUMBER	2. SUPPLEMENT NUMBER	3. EFFECTIVE DATE	4. EXPIRATION DATE
NAG-1-1937	1	6/1/97	5/31/98

5. ISSUED BY

National Aeronautics and Space Administration
Langley Research Center
9A Langley Boulevard, Building 1195B
Hampton, VA 23681-0001

6. ISSUED TO

Norfolk State University
2401 Corprew Avenue
Norfolk, VA 23504

7. PERIOD OF PERFORMANCE (Approximately)

One Year

8. RESEARCH TITLE

The Science and Math for Everyone Project NLPN 97-415

9. TYPE OF ACTION

Second Increment of Funding

10. PRINCIPAL INVESTIGATOR(S)

Dean Moses Newsome, Jr.

11.

AWARD HISTORY	
Prior	$180,000.00
Current	$ 0.00
Total	$180,000.00
FUNDING HISTORY	
Prior	$89,088.00
Current	$90,912.00
Total	$180,000.00

12. NASA ACCOUNTING AND APPROPRIATION DATA

PR: AE .1148 JO: R20318 $ 90,912.00 Complete

13. NASA POINTS OF CONTACT

	Name	Mail Stop	Telephone
Technical Officer	Dr. Marchelle Canright	400	(757) 864-3313
Negotiator	Marcia M. Poteat	126	(757) 864-2417
Grant Administrator	Grants Office	126	(757) 864-9300
Payments	Financial Management	175	(757) 864-2116/2066

14. This Grant is awarded under the authority of 42 U. S. C. 2473(c)(5), and is subject to all applicable laws and regulations of the United States in effect on the date this Grant is awarded, including but not limited to 14 CFR part 1260 (Grants and Cooperative Agreements).

APPLICABLE ENCLOSURE(S) OR STATEMENT(S), IF CHECKED:

☐ Provisions ☒ Multiple Year ☐ Incremental Funding ☐ Other Special Conditions

☐ The Federal Demonstration Project Terms and Conditions and the NASA Agency-Specific Requirements apply to this grant.

☒ No change is made to existing Provisions.

THE UNITED STATES OF AMERICA
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Marcia M Poteat
Marcia M. Poteat, Grant/Contracting Officer

9-4-97
(Date)

SPECIAL CONDITIONS

NAG - 1 - 1937, Supplement 1

§1260.52 MULTIPLE YEAR GRANT (JULY 1996)

This is a multiple year grant. Contingent on the availability of funds, scientific progress of the project, and continued relevance to NASA programs, NASA anticipates continuing support at approximately the following levels:

Second Year $180,000, Anticipated Funding Date 6-1-98

RESEARCH GRANT

NASA Grant and Cooperative Agreement Handbook Web Site: http://procure.msfc.nasa.gov/grcover.htm

1. GRANT/COOPERATIVE AGREEMENT NUMBER	2. SUPPLEMENT NUMBER	3. EFFECTIVE DATE	4. EXPIRATION DATE
nag-1-1937	2	6/1/98	5/31/99

5. ISSUED BY

National Aeronautics and Space Administration
Langley Research Center, Mail Stop 126
9A Langley Boulevard, Building 1195B
Hampton, VA 23681-0001

6. ISSUED TO

Norfolk State University
2401 Corprew Avenue
Norfolk, VA 23504

7. PERIOD OF PERFORMANCE (Approximately)

One Year

8. RESEARCH TITLE

The Science and Math for Everyone Project NLPN 97-415

9. TYPE OF ACTION

Continuation of NASA Research Grant

10. PRINCIPAL INVESTIGATOR(S)

Dean Moses Newsome, Jr.

11.

AWARD HISTORY	
Prior	$180,000.00
Current	$180,000.00
Total	$360,000.00
FUNDING HISTORY	
Prior	$180,000.00
Current	$90,000.00
Total	$270,000.00

12. NASA ACCOUNTING AND APPROPRIATION DATA

PR	JO	Amount	Status
AE .1202	R20318	$90,000.00	Partial
		$ 0.00	
		$ 0.00	
		$ 0.00	
		$ 0.00	
		$ 0.00	

13. NASA POINTS OF CONTACT$

	Name	Mail Stop	Telephone
Technical Officer:	Dr. Marchelle Canright	400	(757) 864-3313
Negotiator:	Marcia M. Poteat	126	(757) 864-2417
Grant Administrator:	Grants Office	126	(757) 864-9300
Payments:	Financial Management	175	(757) 864-2117/2129

14. This Grant is awarded under the authority of 42 U. S. C. 2473(c)(5), and is subject to all applicable laws and regulations of the United States in effect on the date this Grant is awarded, including but not limited to 14 CFR part 1260 (Grants and Cooperative Agreements).

APPLICABLE ENCLOSURE(S) OR STATEMENT(S), IF CHECKED:

☐ Provisions ☐ Multiple Year ☒ Incremental Funding ☐ Other Special Conditions

☐ The Federal Demonstration Project Terms and Conditions and the NASA Agency-Specific Requirements apply to this grant.

☐ No change is made to existing Provisions.

THE UNITED STATES OF AMERICA
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Marcia M. Poteat

Marcia M. Poteat, Grant/Contracting Officer

2/10/98
(Date)

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(B) Parent Assessment Survey Forms

Science and Math for Everyone

FAMILY INTERVENTION NEEDS ASSESSMENT

I Please check the workshop topics which you think would be most helpful to address through the Science and Math for Everyone Parent Training sessions. (Mark 1st, 2nd, 3rd and 4th choices only)

____ 1. Learning to communicate my child's need's with school personnel (principal, counselors, teachers, etc.).

____ 2. How to plan my child's education with the school.

____ 3. Learning more about my child's interests/characteristics.

____ 4. Encouraging and motivating my child's specal interests/characteristics.

____ 5. Enhancing family relationships (parents, other children, extended family members) with my child.

____ 6. Learning about community services (programs, resources, etc.).

____ 7. Learning how to connect with other parents (child related issues, personal issues, financial issues, employ/job related).

____ 8. Learning how to be more involved in your child's school/education.

____ 9. Learning how to deal with stress.

____ 10. Making time for yourself.

____ 11. Other topics of interest _____

_____

II. Please Answer the following:

1. Name another family member, friend or significant other who may also participate in this workshop _____

_____

2. What circustances may prevent you or another family member from attending these workshops _____

_____

3. Is there any other information or support Science and Math for Everyone can provide for you? _____

SCIENCE AND MATH FOR EVERYONE

Parent Survey

I am _____ an MSW School Social Work intern with the Science and Math for Everyone project. The purpose of this survey is to learn from parents how to best help their child in the areas of science and math. The intent of the project is to develop strategies that will assist ethnic and gender minority students succeed in science and math and to enhance their interests and performance via tutorial services, club activities, internet use, science fair, and field trips. This is a collaborative effort among teachers, interns, students, administrators and parents.

School Situation:

1. Does your child like his/her current school program? Yes __ No __
   If no, explain

2. What extracurricular activities does your child participate in at school?
   _____

3. What academic subject(s) does _____ (name of child) enjoy?
   _____

4. What activities interest your child the most? _____
   _____

5. What activities interest your child the least? _____
   _____

6. What is his/her favorite subject in school? _____
   _____

7. What is your child's aspiration for the future? _____
   _____

	Very Much				Not at All
Circle the number that best applies:					
1. How well does your child like math?	5	4	3	2	1
2. Does your child do extra math work?	5	4	3	2	1
3. How much does your child like science?	5	4	3	2	1
4. Does your child do extra science work?	5	4	3	2	1

5. Does your child know how to use a computer? Yes __ No __.
6. Does your child have access to a computer at school? Yes __ No __ Don't Know __
7. Does your child have access to a computer at home? Yes __ No __

8. Does your child belong to a math or science club? Yes __ No __
9. Does your child have nightly math or science homework? Yes __ No __
10. How much time does your child spend on homework for one subject? __ Minutes ___ hours.
11. Is there a family member at home to assist your child with homework if needed? Yes __ No __. If yes, who? _____
12. Does your child have a disability that interferes with his/her learning? Yes __ No __ If yes, explain _____ _____.
13. Do you think that your child is in need of a tutor? Yes __ No __. If yes, in which subject(s) _____.
14. Has your child ever repeated a grade? Yes __ No __. If yes, state grade(s) repeated _____.

Home Situation:

Place a check mark ( ) in the space that applies:	Yes	No
1. Does your child have a specific time to study? If yes, when? _____	___	___
2. Does your child have a quiet place to study/do homework? If yes, where? _____	___	___
3. Is there an adult in the home/family/community who takes an interest in your child's school work? If yes, who? _____	___	___
4. Does your child have a daily routine to follow after school? If yes, explain _____	___	___

5. How much time does your child spend watching television in the evenings? Less than 1 hour __ 2 hours __ 3 or more hours __
6. What types of television programs does your child generally watch? Check all that apply: Cartoons __ Drama __ Sit-coms __ Comedy __ Violence __ Educational __.
7. What are some of your child's after school responsibilities? _____ _____.
8. Have you or a family member taken your child to visit one of the local science museums/centers? Yes __ No __ Where? _____
9. Are there educational materials (books, magazines, encyclopedias, etc.,) in the home for your child's use? Yes __ No ___. Explain _____ _____.
10. What would you provide in your home for your child's education if you had enough money? _____

Family Situation:

1. How many adult family members are in the home? ___
2. Not counting _____, how many children are in the home? ___
   What are the ages? _____
3. Are you employed? Yes __ No __
4. Are any other adult family members in the home employed? Yes __ No ___
   If yes, who? _____
5. Not counting yourself, how many adults in the home help care for _____.
6. What is the total monthly income for your family (check the one that most closely applies)?:

__ less than $600 a month	__ $1401 - 1600	__ $2501 - 3000
__ $601 - 1000	__ $1601 - 1800	__ $3001 - 3500
__ $1001 -1200	__ $1801 - 2000	__ $3501 - 4000
__ $1201 -1400	__ $2001 - 2500	__ $4001 and above

7. What was the last grade of school you completed?
   6 __ 7 __ 8 __ 9 __ 10 __ 11 __ 12 __ high school grad __
   1 yr of college __ 2-3 yrs. Of college __ college grad. __ post grad __
   Vo-tech training __ Other _____
8. How important is your child's education to you ? (circle the one that applies)
   Highly important Important Somewhat important Not Important
9. What are your expectations for your child's education? (check the one that applies)
   Complete high school __ Some college education __ College grad __
   No college education __ Trade/Vocational school ___
10. What barriers do you see to your child's future education? _____
    _____
    _____.
11. Would you be able to get rid of the barriers without assistance? Yes __ No __
    If no, explain _____
    _____
    _____.
12. If you had a choice would you go back to school? Yes __ No __. Explain ___
    _____
    _____.

Parental Involvement in Your Child's School:

Currently at your child's school you .....
(Circle the answer that best applies)

1. Have met your child's teacher(s). Yes No
2. Have met your child's guidance counselor. Yes No
3. Have talked with the teacher by telephone. Yes No
4. Have talked with the counselor by telephone. Yes No
5. Have attended open house or a PTA function. Yes No
6. Have attended parent-teacher conference day. Yes No
7. Have been to school on one or more occasion without appointment. Yes No
8. Have not been to your child's school. Yes No
9. Have been to a school function; play, chorus, sports event, science/ math fair. Yes No
10. Have volunteered for:
    field trips __
    tutoring/teacher aid __
    sent/brought snacks __
    office helper __
    ate lunch with child's class __

Circle the answer that best applies: Most of the time -1 ; Sometimes -2;
Not at all -3

When it comes to your child's classes do you .....

1. Have an awareness of homework assignments brought home? 1 2 3
2. Have an understanding of the homework? 1 2 3
3. Feel free to ask the teacher about homework? 1 2 3
4. Feel free to ask the teacher about behavior? 1 2 3
5. Feel like your knowledge about your child is valued by the teacher? 1 2 3
6. Feel uncomfortable approaching the teacher about grades and homework assignments? 1 2 3
7. Feel uncomfortable approaching the teacher about behavior? 1 2 3
8. Have an awareness of class assignments completed by your child? 1 2 3
9. Have any idea about your child's academic standing? 1 2 3

Circle the answer that best applies: Most of the time -1; Sometimes -2
Not at all -3

When your child brings homework home do you .....

1. Expect him/her to finish homework assignments all of the time? 1 2 3
2. Always remain with him/her until it is finished? 1 2 3
3. Offer to help if it is needed? 1 2 3
4. Check the homework to see if it is correct? 1 2 3
5. Make sure that there is enough pencils, paper, pens, etc., available for him/her? 1 2 3

6. Try to make sure your child understands the homework assignment? 1 2 3
7. Know that there is someone else in the home who can help your child with homework assignments? 1 2 3
8. Know that there is someone outside of the family who can assist my child with homework assignments? 1 2 3

Obstacles that keep me from becoming more involved in my child's academic achievement include: (Circle all that apply)

1. Family income
2. Level of education
3. Lack of family support in the home
4. Lack of family support outside the home
5. Little time due to employment
6. Too tired after working all day
7. Child's peer group not encouraging of academic achievement
8. Neighborhood safety
9. Understanding the school system and how it works
10. Unaware of community resources that offer academic assistance
11. Parent/child relationship
12. Unable to access community resources that offer home/family assistance

Others (please list) _____
_____.

State any personal belief you may have about education: _____
_____
_____.

Are your beliefs different from those of your spouse/significant other, mother, father, or other family members helping to raise your child. _____
_____.

Do you feel supported in your beliefs? Yes __ No __ Explain _____
_____
If not, how does this affect how you support your child's educational pursuits? _____
_____.

Do others help with school projects or attend cultural events with your child? _____
Elaborate _____

_____.

Can you tell us any additional information about how your child learns best? _____

_____

_____.

Identifying Information:

Student Name: _____ DOB: _____ Age: ___ Race/Sex: ___

School: _____ Grade: _____

Name of person completing the survey: _____

Relationship to student: _____

Thank you for taking your time to complete this survey on your child's educational pursuits.

Norfolk State University
Ethelyn R. Strong
School of Social Work

Name of Person Completing Form
_____
Phone Number _____
Address: _____

Date _____

Family Assessment Profile

ALL INFORMATION ON THIS FORM WILL BE KEPT STRICTLY CONFIDENTIAL. IT WILL NOT BE A PART OF THE SCHOOL RECORDS.

Identifying Information and General Background

Student Name: _____ Sex: Male ____ Female ____ Age: ___

DOB:_____ School: _____ Grade: _____

Parents Name: Father_____ Mother _____
Occupation: _____ _____
Currently employed: Yes ___ No ___ Yes ___ No ___

Child resides with: Both Parents ____ Mother ____ Father ____ Other _____
If other, please specify relationship _____
Other adults in the home: _____

Siblings: Name	Age	School	Grade	Learning Disabilities

Developmental History

(Place an X where appropriate, otherwise give appropriate answer)

1. Delivery: Premature ___ Normal ___ Late ___
2. Please give age or approximate age: (months or years)
   Started talking _____ Used 3 or 4 word _____ First bean to read _____
   Formal instruction (preschool) _____ First walked _____
   Hand dominance: Left ____ Right ___ Both ____
   History of ear infections: Yes ____ No _____ Began at what age? _____
   Last ear infection _____.
3. Mother's Pregnancy: Initial prenatal care in which month of pregnancy?_____
4. Did mother experience any of the following during pregnancy?
   Toxemia __ High blood pressure ___ Emotional Stress ____

Smoked cigarettes ___ Domestic violence ___ Intake of alcohol ____
Intake of nonprescription drugs ___ Intake of prescription drugs _____
Any other health issues during pregnancy _____
_____

Medical/Health History

5. Does either parent have any serious health problems?
   Yes ___ No ___ Mother Yes ___ No ___ Other
   Yes ___ No ___ Father Name _____
6. Does either parent have a chronic illness?
   Diabetes __ Heart Disease __ Renal Failure __ Cancer __
   Asthma __ Sickle Cell Anemia __ Trait __ Allergies __
   Epilepsy __ Other _____
7. Comments for any condition marked _____
   _____
8. Does either parent take prescription medication? Yes __ No ___
9. Does your child have serious health problems? Yes __ No ___
   If yes, describe _____
   _____
10. Have any of your children had any of the following? (Place name beside condition)

	Yes	No		Yes	No
Allergies	____	____	Rheumatic Fever	____	___
Diabetes	____	____	Other Serious Illness	____	___
Epilepsy	____	____	Dietary Problems	____	___
Heart Disease	____	____	Major Operation	____	___
High Fevers	____	____	Serious Injury	____	___
Asthma	____	____			

   Comments regarding any area marked _____
   _____
11. Type of health insurance: HMO __ Private __ Medicaid __ None __

Social and Personal Factors

12. Your child's leisure time choices: Sports ___ Running ___
    Writing ___ Music ___ Dancing ___ Reading ___ Drawing ___
    Singing ___ Drama ___ Special hobby _____
13. Family activities together: Going to Church ___ Movies ___ Shopping ___
    Amusement Park ___ Attend Art Festivals ___ Watch T.V. ___
    Reading ___ Multicultural events ___ Visit local Museum ___
14. Your child's choice of friends (age, sex) _____
    _____
15. How does your child get along with peers? Very Well __ Fair ___ Poorly ___
16. Which family member is your child closest to? _____
    Explain _____
17. How does your child spend his/her time alone? _____
    _____

18. Child's responsibilities in the home (mark X where appropriate):
Tidy up his/her room ___ Wash dishes ___ Sweep floors ___
Scrub floors ___ Clean bathroom ___ Dust/polish furniture ___
Take out trash ___ Mow lawn ___ Set the table ___
Keep trash out of yard ___ Help prepare meals ___ Other _____
Parent's Employment:
19. Is there anything you would like to be different for your child? _____

_____

Parent's Employment

20. Father: Currently employed Yes ___ No ____
If yes: Full time ___ Part time ___ Seasonal ___ Temporary ___
21. Mother: Currently employed Yes ___ No ____
If yes: Full time ___ Part time ___ Seasonal ___ Temporary ___
22. Other _____: Currently employed Yes ___ No ___
If yes: Full time ___ Part time ___ Seasonal ___ Temporary ___
23. Annual income __ (Gross) Monthly income __(Net)

$10,000-20,000 __	$850-1,600 __
$21,000-30,000 __	$1,601-2,500 __
$31,000-40,000 __	$2,501-3,335 __
$41,000-50,000 __	$3,336-4,166 __
$51,000 and over __	$4,167 and over __

24. Source of any other income: Child support __ Alimony __ Public Assist __

Educational Factors

Your Child

25. Child's own career goals _____
26. Parent's career goals for child _____
27. Does child want to attend college? Yes __ No ___
28. Child's area of interest _____
25. Has child had any significant educational experiences? _____

_____

29. What is child's general attitude toward school? _____

_____

30. Are there educational resources in the home ? Yes __ No __
If no, explain _____
If yes, what are they? Encyclopedia __ Dictionary ___ Thesaurus ___
Computer ___ Word processor ___ News paper ____ Magazine's ___
Calculator __ Type writer ___ Work books ___ Books ____
31. Child's academic work is: Above Average __ Average __ Fair ___
Poor ___ Unknown ___
32. Child's grades are generally:

	A	B	C	D	Failing
English	___	___	___	___	___
Science	___	___	___	___	___
Social Studies	___	___	___	___	___

	A	B	C	D	Failing
Social Studies	___	___	___	___	___
Math/Algebra	___	___	___	___	___
Elective _____	___	___	___	___	___

33. Child's attendance is: Excellent __ Very Good __ Good __ Fair __ Poor __

Parent's/Guardian's Education

34. Mother completed the following grade: 8th __ 9th __ 10th __ 11th __ 12th __
graduated high school __ GED __ College: 1-2 yr's __ 3-4 yr's __
graduated college __ Career/Technical School __ Other _____

35. Father completed the following grade: 8th __ 9th __ 10th __ 11th __ 12th __
graduated high school __ GED __ College: 1-2 yr's __ 3-4 yr's __
graduated college __ Career/Technical School __ Other _____

36. Other _____ completed the following grade: 8th __ 9th __ 10th __
11th __ 12th ___ graduated high school ___ GED __ College: 1-2 yrs. __
3-4 yrs __ graduated college __ Career/Technical School __ Other _____

37. Mother's attitude toward education _____
_____
_____

38. Father's attitude toward education _____
_____
_____

39. _____'s (care giver/guardian) attitude toward education _____
_____
_____

40. Additional comments _____
_____
_____

Thank you for taking your time to respond to this questionnaire.

(C)Samples of Parents' Consent Forms

THE SCIENCE AND MATH FOR EVERYONE PROJECT

NASA/NSU

Lake Taylor and Northside Middle Schools

Parental Consent and Medical Release Form

For Field Trip February 28, 1998

Norfolk State University

The undersigned parent (s) or legal guardians of _____,
requests that my child be permitted to engage in the educational activity .

Description of the Activity:
Field trip to the Norfolk State University campus: while on the campus, students will have a chance to learn interesting sites on the Internet; to visit the student union and university book store, the new Spartan Mall, and student dormitories; eat lunch in the NSU student cafeteria; and participate in hands on activities called Adventures in Science conducted by a Norfolk State faculty member.

Parental Consent and Medical Release:
I do hereby acknowledge the intent of this educational program and consent to my child participating. Should an accident occur necessitating medical treatment for my child, this document shall serve as my authorization for the emergency care physician to administer treatment he or she deems appropriate. Further, I acknowledge my financial responsibility for any treatment in such an emergency.

_____
(Signature of the Parent/Guardian)

_____
Date

_____
Emergency Telephone

_____
Home Telephone

The Science and Math for Everyone Project
NASA/NSU
Lake Taylor and Northside Middle Schools
Field Trip
Norfolk State University
February 28, 1998

8:30-9:00	Arrival at NSU-Wilson Administration Building at corner of Brambleton Ave. and Park Ave.
9:00-10:00	Norfolk State University-Grounds Tour
10:00-12:00	Computer Center Robinson Tech Center
12:00-12:45	Lunch NSU Student Cafeteria
1:00-3:00	Adventures in Science-NSU Faculty Member
3:00	Deliver Students to Parents

Parents are invited to accompany us on our field trips. Parents of _____ will / will not go on the field trip to NSU.

PERMISSION FOR FIELD TRIP

Dear Parent:

Students participating in the Science and Math for Everyone Project will be taking a day trip to the Smithsonian Air and Space Museum in Washington, D.C. on Tuesday, March 23, 1999. The NSU Bus will leave Lake Taylor Middle School at 5:15 a.m. and will return the same day at 8:30 p.m. We are asking that you have your child at the school by 5:00 a.m. so that the bus can leave and arrive on time. All trip fees will be taken care of by the NASA project. Any additional spending money is your expense. Meals will be provided for your child. If you would like for your child to take this trip please check the appropriate space and sign your name on the line provided.

YES _____ I GIVE PERMISSION FOR MY CHILD _____ _____TO ACCOMPANY THE SCIENCE AND MATH PROJECT PARTICIPANTS TO WASHINGTON D.C. ON TUESDAY MARCH 23, 1999.

_____ _____
Parent Signature Date

NO __ I DO NOT GIVE PERMISSION FOR MY CHILD_____ _____ TO GO ON THE FIELD TRIP.

Parent Signature _____ Date _____

MEDICAL/EMERGENCY CARE

I agree for my child to receive medical emergency care, if needed while on the trip, with the understanding that I will be contacted at the number stated below as soon as possible following the incident which warrants medical attention.

Yes _____ Insurance _____# _____

Emergency/Home Phone _____

_____ _____
Parent Signature Date

No _____ I do not give permission for emergency medical care

Emergency/Home Phone _____

_____ _____
Parent Signature Date

THE SCIENCE & MATH FOR EVERYONE
NASA/NSU
Lake Taylor Middle School
NSU tel:683-9592, 683-8695, fax: 683-2556; Lake Taylor tel:441-5635, fax: 441-5653

Field Trip to
National Air and Space Museum
March 23, 1999

Good Morning! It is too early. Thank you for participating in this trip and lets make it fun and easy. Each intern will be responsible for 5 or 6 students and parents will help their children's group.

Patricia Edwards & Brenda Kittrell	7th grade group I	Ms. White
Jackita Macklin & Natasha Helsey	7th grade group II	Ms. White
Angela Walker & Robert Morris	8th grade group I and II	Ms. Shearin

Interns please check their students always and provide meals. Designate a helper from your group. Interns check their students every time before getting on the bus and after getting of the bus and **report to Ms White or Ms Shearin.**

5:15 Gathering at Lake Taylor
5:30 Leaving for Washington, D.C.

8:00 Rest Area Stop after Richmond
Breakfast in the bus

9:30 Arriving in Washington, D.C.

9:45 Tour in museum

11:15 Meet at the tour desk in the **South Lobby**
11:30 African Americans in Air and Space History

12:30 Lunch at Sodexho Marriott Services in the museum

1:15 Tour in museum

2:15 **Meet in front of the IMAX theater**
2:30 To Fly
3:05 Cosmic Voyage

4:00 Meet at the bus
4:10 Leave for Norfolk

6:00 Dinner at McDonald in Ashland

8:30 Arrive at Lake Taylor

(D) Interns' Profile

The Science and Math for Everyone Project
Grant Number: NAG-1-1937
List of Interns
1997-1998 School Year

Name	Social Security #	Status	Gender	Race
Sherin Shearine	[redacted]	DSW	F	Afr. A.
Wanda Anderson	[redacted]	MSW	F	Afr. A.
Barbara Brinson		MSW	F	Afr. A.
Deborah Dey		MSW	F	Cauc.
Mara Oswalt		MSW	F	Cauc.
Joseph Barton	[redacted]	BSW	M	Afr. A.
Keisha Knight		BSW	F	Afr. A.
Adlena Moody		BSW	F	Afr. A.
Kevin Sutton		BSW	M	Afr. A.
Gregory Wallace		BSW	M	Afr. A.
Stephen Austin	[redacted]	Science	M	Afr. A
Terrence Aursby		Math	M	Afr. A.
George L. Budd, III		Math	M	Afr. A.
Roy Harris		English	M	Afr. A.
Natasha Helsey		Science	F	Afr. A.
Timothy Nagel		Math	M	Cauc.
Allen Ravenpak		Science	M	Asian
Vera Roberts		Science	F	Afr. A.
Sherry Washington		Math	F	Afr. A.
Marcarre Williams		Math	F	Afr. A.

SCIENCE AND MATH FOR EVERYONE
Grant Number: NAG-1-1937
List of Interns
1998-1999 School Year

NAME/ADDRESS	PHONE	SSN	SCHOOL	AGE/RACE/ GENDER
SHERIN SHEARIN 952 AMESBURY ROAD VIRGINIA BEACH, VA 23454	495-0861(H) 441-2916(W)	[redacted]	DSW	52/AFR AM F
ALLISON SHIRLEY 906 THOUSAND OAKS DRIVE VIRGINIA BEACH, VA 23454	496-5044	[redacted]	MSW	27/WHITE F
RENEE JOHNSON 12724 SANDPEBBLE CIRCLE #19 NEWPORT NEWS, VA 23606	930-1640	[redacted]	MSW	32/AFR AM F
BRENDA KITTRELL 1212 FREEHOLD CLOSE VIRGINIA BEACH, VA 23455	462-4230	[redacted]	MSW	54/AFR AM F
MANUEL SERRANO 7734 ENDFIELD AVE. APT. 103 NORFOLK, VA 23505	423-1663	[redacted]	MSW	39/HISPANIC M
ANGELA WALKER 2839 MAPLETON AVENUE NORFOLK, VA 23504	623-3844	[redacted]	BSW	36/AFR AM F
JACKITA MACKLIN 5649 POPLAR HALL DR. NORFOLK, VA 23503	459-2101	[redacted]	BSW	33/AFR AM F
PATRICIA EDWARDS 1716 SPRINGFIELD AVENUE NORFOLK, VA 23523	543-1163	[redacted]	BSW	42/AFR AM F
KEISHA KNIGHT 626 QUINCY STREET HAMPTON, VA 23661	722-9592(H) 727-6401(W)	[redacted]	BSW	23/AFR AM F
ROBERT MORRIS 382 S. MILITARY HWY. APT C NORFOLK, VA 23502	461-2662	[redacted]	BSW	22/AFR.AM M
JA'NAY WILSON 650 EAST LEICESTER AVE. NORFOLK, VA 23503	480-2845	[redacted]	ED	19/AFR AM F
KEISHA CLARK 209 HONEYBROOK CT. VIRGINIA BEACH, VA 23462	497-7203	[redacted]	ED	__/AFR AM F

SCIENCE AND MATH FOR EVERYONE
Grant Number: NAG-1-1937
List of Interns
1998-1999 School Year

ROSA ROSS 3593 MARVELL ROAD VIRGINIA BEACH, VA 23462	431-8239	[redacted]	ED	__/AFR AM F
NATASHA HELSEY 3104 GUNIEVERE DR. CHESAPEAKE, VA	485-3236	[redacted]	ED	__/AFR AM F
RACHEL BONA 2401 CORPREW AVE. NORFOLK, VA 23504	626-2632	[redacted]	ED	__/AFR.AM F
LAJUANE A. TRUSTY 26 HOLLY HILL LAIN PORTSMOUTH, VA 23702	487-5998	[redacted]	ED	__/AFR.AM M
DARON MOORE 414 WARREN ST. APT 1 NORFOLK, VA 23505	440-1120	[redacted]	ED	__/AFR.AM M
SCHRIE L. JANET 4400 COLONIAL AVE. NORFOLK, VA 23508	627-0902	[redacted]	ED	19/AFR.AM F
MENEKA CALABRESE 702 STRATFORD STREET PORTSMOUTH , VA 23701	626-2676	[redacted]	MATH	21/AFR AM F

THE SCIENCE & MATH FOR EVERYONE PROJECT

NASA AND NSU
Lake Taylor Middle School and Northside Middle School
Tel: 683-9592, 683-8695 Fax: 683-2431

Telephone Directory

1997-1998 School Year

Principle Investigator	Dr. Moses Newsome, Jr	683-8668	683-2556(F)
Project Coordinator	Dr. Hannah S. Paik	683-9592,	467-4777
Education Coordinator	Dr. Carl Leslie	683-8705,	583-0894
DSW Intern	Mrs. Sherin Shearin	441-2916,	495-0861
Lake Taylor Middle School		441-5635	441-5653(F)
Principal	Mrs. Toni Portlock	441-5635	
Math Teacher	Ms. Danna Capeheart	441-5635	
Visiting Teacher	Carolyn Simpkins	441-5637	
Counselor	Ms. Janet Dixon	441-5637	
MSW Intern	Barbara Brenson	496-7514	437-4754(O)
	Mara Oswalt	422-2776	
BSW Intern	Joseph Barton	471-6405	
	Kevin Sutton	461-3450,	670-7643(pg)
BS Intern	George L. Budd, III	499-6399	
	Sherry Washington	583-6171	
	Vera Roberts	626-2776	
Northside Middle School		441-1825	441-1794(F)
Principal	Ms. Vivian Hester	441-1825	
Assistant Principal	Ms. Eibel		
Science Teacher	Ms. Judy Gulledge		
Social Worker	Mr. Terrence Mayes	441-1829	
MSW Intern	Wanda Anderson	255-4210	
	Deborah Dey	427-9481	
BSW Intern	Keisha Knight	722-9592	
	Adlena Moody		
	Gregory Wallace	423-5013,	451-0911
BS Intern	Catchet Beaver	858-2457	
	Marcarre Williams	626-3008	
	LaWanda T Moon	626-3509	

THE SCIENCE & MATH FOR EVERYONE PROJECT

NASA AND NSU
Lake Taylor Middle School and Northside Middle School
Tel: 683-9592, 683-8695 Fax: 683-2556

Telephone Directory

1998-99 School Year

TITLE	NAME	WK PHONE	HM PH/FAX
Principal Investigator	Dr. Moses Newsome Jr.	683-8668	683-2556(F)
Project Coordinator	Dr. Hannah S. Paik	683-9592	467-4777(H)
Education Coordinator	Mrs. Harriet P. Brown	683-8705	853-5201(H)
DSW Intern (SW Supervisor)	Mrs. Sherin Shearin	441-2916	495-0861
Secretary	Mrs. Jennifer Barksdale	683-8695	340-5365
Lake Taylor Middle School			
Principal	Mrs. Toni Portlock	441-5635	441-5653(F)
Assistant Principal	Mr. Clyde Wiggins	441-5635	
Math Lead Teacher	Mrs. Dana White	441-5635	
Science Lead Teacher	Ms. Pam Arline	441-5635	
Project Interns			
MSW	Renee Johnson	930-1640	
	Brenda Kittrell	462-4230	
	Manuel Serrano	423-1663	
	Allison Shirley	460-5044	
BSW	Patricia Edwards	543-1163	
	Keisha Knight	722-9592	
	Jackita Macklin	459-2101	
	Robert Morris	4612662	
	Angela Walker	623-3844	
Education	Rachel Bonas	626-2632	
	Meneka Calabrese	626-2676	
	Keisha Clark	497-7203	
	Natasha Helsey**	485-3236	
	Daron Moore	440-1120	
	Rosa Ross	431-8239	
	Lajuane Trusty	487-5998	
	Ja'Nay Wilson	480-2845	

THE SCIENCE & MATH FOR EVERYONE PROJECT

NASA AND NSU
Lake Taylor Middle School and Northside Middle School
Tel: 683-9592, 683-8695 Fax: 683-2431

APPLICATION FOR INTERNSHIP

Name: _____ Date: _____
Address: _____ Gender: _____
_____ Race: _____
Social Security Number: _____ Age: _____
Telephone: _____(home) Major: _____
_____(work) _____(emergency)

What interests you in the Science and Math for Everyone Project?

What experience have you had in working with middle school children?

What are some of your strength and weakness?

What do you think can be done to improve students' performance?

What do you think you can do to improve students' performance?

What computer program can you do? Can you use Power Point or Internet?

Can you work at the after-school program from 2 to 4:30 p.m. on Tuesday, Wednesday and Thursday at the Northside Middle School (on Granby St.) or Lake Taylor (Kempsville Rd.) Middle School and other special functions such as field trips, meetings with teachers?

In 1998 Fall Semester, You will be ___Sophomore, ___Junior, or ___Senior.

Your Grade Point Average as of March 1988 is _____.

NORFOLK STATE UNIVERSITY

THE SCIENCE AND MATH FOR EVERYONE PROJECT

COMMITMENT OF INTERHSHIP

The Science and Math for Everyone Project is a research/education intervention strategy made possible by a close partnership between Norfolk State University, NASA Langley Research Center's Office Education and Lake Taylor Middle School. This innovative project seeks to develop unique strategies that assist disabled, economically disadvantaged and/or minority students succeed in science and math programs.

A stipend will be given during each semester. This stipend will change intern's financial status and may affect his/her other scholarship and/or loan. BSW Interns will work with Science and Math Interns as a team, and will assist students by assessing their social and academic needs at Lake Taylor Middle School and implementing individual and group activities that are designed to promote higher achievement in science and math. BSW Interns also offer individual counseling and group sessions to promote motivation, self-esteem, assertiveness, communication skills, conflict resolution, interpersonal relationships, etc. Education Interns will work with students to improve their performance in science and math through science projects, computer programs, and assistance with homework. MSW Interns will work mainly with families by assessing family needs, factors in student's home environment that may impede performance, designing a family intervention strategy, empowering parents for their children's achievement, conducting parent training groups, providing appropriate linkages with community resources, etc.

I understand this project is an experimental research in which Interns will provide intervention. I will

(1) be willing to work with team;
(2) be responsible for assigned tasks;
(3) keep the record of activities and turn it in on time;
(4) be available from 1:45 p.m. to 4:30 p.m. on Tuesday, Wednesday & Thursday, and some evenings and Saturdays for special events;
(5) attend teachers'/interns' meetings and supervisory meetings;
(6) value diversity and understand disability;
(7) follow rules of Lake Taylor Middle Schools; and
(8) call the appropriate supervisor and the Middle School office in case of emergency.

I understand the purpose of the Project and that the stipend will depend on my productive performance. I have definite interests and commitment in working with minority middle school children (and their families--MSW interns) to promote their interest and to improve their performance in science and math.

_____ _____

Signature Date

(E) Interns' Orientation Materials

A Guide to Building Effective Communication And Positive Self-Esteem

- Encourage bonds of mutual respect and affection
- Set limits—make firm moral and social demands
- Prepare your child for life by developing family routines
- Teach family rules that are consistently implemented
- Provide explanation that are clear and understandable
- Give your child responsibility allowing them the opportunity to practice and be responsible

Programs for Middle School Students and Their Families

- Cultural and personal affirmation programs
- Enhance parents' capability as caregivers
- Monitor students progress in essential skills
- Develop family support teams in the community
- Encourage continued parent involvement
- Develop programs/workshops critical for making decisions about schooling
- Plan ethnic activities in school and in the community

Risk Factors in the Individual Student Context

- Ethnic group identity and motivation
- Sense of self-efficacy
- Relevance of education and motivation
- Emotional trauma and vulnerability
- Family history of schooling
- English proficiency and literacy in home language

Risk Factors in the Family Context

- Family's socioeconomic status
- Parents' educational level
- Lack of parental supervision and support
- Cultural values
- Parental expectations and family priority
- Family relationships and child-rearing practices
- Parental involvement with the school

Risk Factors in the Classroom and School Context

- Inadequate assessment and inappropriate placement and education
- Grade retention policies and practices
- Inadequacy of orientation and parent involvement
- Lack of cultural affirmation
- Lack of recognition of individual differences
- Quality of language and instruction
- Racial and social climate in the school
- Teacher expectations

Characteristics of the Urban Learner

- Like to know "why"
- Needs concrete material or well structured material
- Tends to prefer less personal space
- Requires feedback
- Need teacher/peer encouragement
- Engages in creative, intuitive thinking
- Uses the trial and error approach
- Has short attention span
- Prefers to acquire knowledge through visual and kinesthetic/tactile mode
- Aware of nonverbal and environmental factors
- Prefers whole versus part learning
- Interprets body language or facial expression
- Very people oriented
- Uses colorful, action-oriented words

The Science and Math for Everyone Project
Education Intervention

Project Objectives:
Faculty and students will experiment will various strategies to enhance project participant's performance, aptitude and interest in science and math programs. These educational strategies may include, but are not limited to:

- Designing and Implementing a Positive, Individualized Education/ Study Contract (with monitoring by undergraduate education interns/student teachers) for each seventh and eighth grade program participant. Positive incentives will be developed to encourage contract compliance;
- Individualized Parent Education-Empowerment Programs including variations on the "Parent Effectiveness Training" (PET) model.

Requirements of Education Interns

Provide weekly lesson plans-plans **should not** be detailed, only include; objectives, activities, evaluation.

Sustain a daily up-to-date log that can be presented at any time to the Education Coordinator.

Provide satisfactory service to the project.

Be present and on task five days a week.

Attend Saturday field trips to Hampton and Richmond.

Responsibilities of Education Interns

- Interact with students three days a week
- Work with MSW and BSW Interns as a team in group or club
- Design and implement individual study contracts in science and math for students
- Mentor students
- Participate/work with groups of students approximately two hours after school
- Keep daily journal of all activities
- Conduct tutoring sessions in science and math
- Be good role model at all times
- Participate with other project participants cooperatively
- Develop opportunities for students to sue computer, internet experiences, science and math study software, and other learning activities
- Supervise student projects for NASA Day at school programs
- Supervise student projects for School Science Fair
- Work cooperatively with classroom teachers
- Develop and/or submit a copy of all activities and contracts used in project with students
- Develop activities for students to work on independently
- Design and implement an individualized study contract in science and math for students. Contracts may include activity strategies such as:
    - Time management for library use
    - Collaborative activities with other students
    - Peer cooperation
    - Study skills
    - Participation in tutorial sessions

Expectations of Education Interns

Assist with changing teacher expectations about disabled, disadvantaged, and minority students

Aid in building self-esteem in students

Help students get-rid of barriers about science and math and their ability to achieve

Help develop good study habits within the students

Aid in building confidence within the students

Assist in developing self motivational skills within the students

Aid in the development of self-pride within the students

Suggest ways for positive exposure to students' achievements

Provide an audience for students to display their newly discovered talents

Promote higher achievement in science and math

Provide opportunities for student to work in teams

Implement individual club/group activities

Implement joint club/group activities.

TIPS ON CLASSROOM DISCIPLINE

Here are a few time-honored suggestions, if observed, will help you immeasurably.

1. Have only a few rules. Be sure they are necessary and everyone knows them. Enforce them without emotion or commotion.
2. Be consistent and impartial. Don't have "pets" who get away with things and others cannot. It shouldn't make any difference "who" does it. "What" is done and under what circumstances should make the difference.
3. Don't argue with a student. Enforce the rules.
4. Don't nag or provoke a student.
5. Certainty of punishment is more of a deterrent than severity.
6. It is better to be strict with new groups at the beginning. It is easier to loosen up as the school year progresses than it is to tighten up.
7. Stop the little things. It is easier to put out a match than it is a forest fire.
8. Accept the class in a positive state of mind. If you expect trouble, you'll probably get it.
9. Don't make threats you can't carry out, such as, "If you do that again, you'll never come back to this class, or, "Either you go or I go."
10. Don't be afraid to acknowledge an error. You are not infallible and the class knows it.
11. Don't discipline an entire class for the misconduct of an individual or a few.
12. There is a difference between being friendly and being familiar. Observe it!
13. Study your class before making final seating arrangement.
14. Remember that true discipline is self-discipline. This should be your goal and you should make it clear to the student.
15. Sarcasm and ridicule have no place in the classroom.
16. If you get satisfaction from punishing a child, then all you desire is revenge and not correction.
17. In punishing or reprimanding a child, never speak disrespectfully of his parents or his home background.
18. Discipline is not synonymous with punishment. Some teachers achieve good discipline by a system of rewards and privileges. Students who are disorderly are deprived of privileges.
19. Observe the basic "mechanics" of classroom management. Is it too hot, too cold, too stuffy, not enough light, etc.?
20. Be tolerant of passing fancies - plaits, braided long hear, and dress should not dictate a student's grade or how he is treated,. Note student rules.
21. Remember that since the ultimate goal of all discipline is self-discipline, you, above all, should exemplify it.
22. Don't interpret any misconduct as being directed at your personally. Sometimes teaches who consider a student disrespectful are not considerate of his background and how he talks or acts around those in his neighborhood.
23. Don't make demands of the administration in disciplinary issues. You have a right to anticipate some action.
24. Study the cumulative record on your students. The guidance department will assist you in making them available.

I'm A Life Toucher

Remember: All Teachers aren't Life Touchers, but all Life Touchers are definitely Teachers.

Teachers	Life Touchers
Push	*Pull*
Agonize	*Organize*
Give examples	*Are the examples*
Teach a subject	*Are subject to touching lives while teaching life lessons*
Try to change others	*Change themselves*
Sometimes get bitter	*Get better and better*
Don't like to change	*Change what they don't like (by changing what they have to look at or changing the way they look at it)*
Concentrate on grades	*Help students concentrate and grade their own progress*
Are interested in teaching	*Are interesting as teachers*
Help students get thru tests	*Help people get thru life*
Demand answers to the questions	*Encourages questions of the answers*
Have a room full of short adults	*Have a class full of human beings*
Teach (glove compartment)	*Train (trunk)*
Know their subject matter	*Know what to do when the subject doesn't matter*
Call kids winners or losers	*Realize we are all choosers*
Label kids with periods	*Help people find themselves*
Know what is taught	*Know it's what's caught that counts*
Have trouble makers	*Recognize hurting kids who are having trouble making it*
Try to raise morale	*Realize morale filters down from the top (the life toucher)*
Have bad bunches	*Take full responsibility for the learning atmosphere in their classroom*
Talk the message	*Walk the message*
Tell	*Explain*

Happy Life Touching; Bill Sanders

8495 Valleywood Lane • Kalamazoo, Michigan 49002 • 616-323-8074

Two Alphabets to Smooth the Way

26 management techniques learned "on the job" by a first-year teacher

BY GINO SANGIULIANO

"What do you think about teaching now?" I was asked this question many times by my colleagues following my first year as a fourth grade teacher. Invariably, I told them that I was ready to do it all over again. The 26 children and I had had a wonderful experience with many memorable moments.

Here are 26 classroom management techniques I learned "on the job" during my first year.

Zero rewards. Bribing kids doesn't help them mature. It only trains them to act a certain way in order to receive a prize.

You are the teacher. Always trust your own judgment and do what you feel is right.

X-plain everything to the class. Let them know why you miss a day. Chances are, it's not that exciting, but it satisfies their curiosity.

Wake up the learner in every student. To do this, you must make your motivation and enthusiasm contagious.

Value your class's opinions, and don't fake it. Give them the opportunity to make decisions that truly matter to them.

Understand each child. Find out the children's likes and dislikes, hobbies, family situation.

Teach, don't train. When faced with a difficult task, don't be concerned with the final outcome, but with the process.

Stand by your students. As a teacher, you are their advocate. Let them know you are on their side and never betray their trust.

Respect! If you show respect for the children, they in turn will respect you. This may mean giving up a little control, but it's worth it.

Question yourself at the end of the day. Self-evaluation makes for learning. Find out why some things work and other things don't.

Promote all the good things that happen both in and out of class. Children love to hear praise.

Open your mind and your heart. Teachers need to accept the many differences in children and kids need to know they're wanted.

Negotiate. When problems arise, talk to the children. If a system of give-and-take is established, your relationship will grow.

Model both academics and social behavior. Kids learn more by watching you than anything else.

Live, love, learn. Enjoy the time you have with the class, for they'll always remember you.

Keep students interested. If you feel you are losing them, it usually means they're bored.

Jokes. Develop a sense of humor – in yourself and in the children. It's amazing the power you can get out of a good laugh.

Initiate action. Don't wait for others to take the lead in projects. If you find something that appeals to your class, go for it.

Help! Give it to students. Get it from your peers.

Go the distance. Work hard every day of the school year. The extra time you put in will show and the kids will respond.

Finish what is started. Most children need a sense of closure to events. It may mean having to rush to get it done, but they'll remember it.

Expect the unexpected. Never rely on a schedule or on a plan book. You'll probably be amazed at some of the interruptions that will occur.

Delivery is where it's at! No matter how boring a topic may be, if you're excited about it, chances are the children will be, too.

Create a family environment. For some children, a classroom is the closest thing they have to one.

Bring out the child in you! Have fun. Join in the games, sit on the rug, eat lunch and talk with the kids. You'll get to know them better and you'll gain their trust.

Analyze situations. It's important to hear both sides of the story and try to find out what motivated each child to react a certain way. ↓

Gino Sangiuliano "moved up" with his class: he now teaches fifth graders at Robinson Elementary School, Mansfield, MA.

THE SCIENCE & MATH FOR EVERYONE

NASA and NSU and Lake Taylor Middle School

Tel: 441- 5635 (Lake Taylor), 683-8695, 683-9592 (NSU) Fax: 683-2556

CALENDAR FOR 1998-99

(tentative)

September 2	**Wed**	**Project Orientation: 3:00 p.m. – 6:45 p.m.**
	Tue	Middle school students return to school
15	**Tue**	**The Project Activity Begin**: introduction (7^{th} & 8^{th} grade together)
16 – 17	W-Th	Self Esteem Tests
22-23	Tue	Group fun activities and academic assessment by students
24	Thur	Staff development activities (early release day for students) Parent Workshop
October 12	Mon	Parent-teacher conference day (students not in school)
15	Thur	Staff development activities (early release day for students)
22	Thur	Parent Workshop
November		Field Trip
10	Tues	Teacher records day **(no activities)**
11	Wed	Veterans Day **(no activities)**
19	Thurs	Staff development activities (early release day for students) Parent Workshop
26 Thur – 27		**Thanksgiving Holidays**
December **10**	**Thur**	**Project Activities End** (Holiday party)
17	Thur	Staff development activities (early release day for students)
23 – January 3, 1999		**Winter Holidays**
1999		
January 4	Mon	Middle school begin
12	**Tue**	**Project Activity Begin** (group discussion)
18	Mon	Lee-Jackson-King Memorial Day
21	Thur	Staff development activities (early release day for students)
28	Thur	Parent Workshop
29	Fri	Teacher records day
February 1	Mon	the 2^{nd} semester of middle school begin
15	Mon	President's Day
18	Thur	Staff development activities (early release day for students)
25	Thur	Parent Workshop

March 8	Mon	Parent-teacher conference day
8-12		NSU Spring Break (**Project Activities continue.**)
18	Thur	Staff development activities (early release day for students)
		Parent Workshop
25	Thur	Field Trip
April 1	Thur	**Science Fair**
5-9		**Middle School Spring Holidays**
15	Thur	Staff development activities (early release day for students)
27	**Tue**	**Year End Rocognition Ceremony**

(F) Year-End Celebration Programs

Project Personnel

Dr. Moses Newsome, Jr. Principal Investigator
Dr. Hannah S. Paik, Project Coordinator
Dr. Carl M. Leslie, Education Coordinator
Ms. Sherin Shearin, DSW Intern

Lead Teachers

Ms. Dana Capehart, Lake Taylor Middle School
Ms. Judy Gulledge, Northside Middle School

MSW Interns

Wanda Anderson
Barbara Brinson
Deborah Dey
Mara Oswalt

BSW Interns

Joseph Barton
Keisha Knight
Adlena Moody
Kevin Sutton
Gregory Wallace

Education Interns

Terrence Aursby
George L. Budd, III
Natasha Helsey
Stephen Austin
Roy Harris
Vera Roberts
Sherry Washington
Marcarre Williams
Timothy Nagel
Allen Ravanpak

The Science and Math for Everyone Project is a research/education intervention strategy made possible by a close partnership between Norfolk State University and NASA Langley Research Center's Office of Education. This innovative project seeks to develop unique strategies that assist disabled, economically disadvantaged and/or minority students succeed in science and math programs. The project sites are Lake Taylor Middle School and Northside Middle School in Norfolk. We appreciate NASA Langley Research Center's Office of Education for giving us this opportunity.

The Science and Math for Everyone

Year-End Recognition Ceremony

May 6, 1998
11:00 a.m. - 1:00 p.m.
Scott/Dozier Dining Hall

Norfolk State University
School of Social Work
2401 Corprew Avenue
Norfolk, VA 23504
Tel.: 683-8695 Fax: 683-2556

The Student Pledge*

I believe that Science and Math are for all Americans. The Science and Math for Everyone Project is for me and us. I will aim for new horizons. I will motivate my mind and wish to be heard. I will believe in myself and others. I will do my best to participate in the project.

*Developed by Student Participants

Outstanding Attendance

Tiffany Brown
Ivy Commer
Shawana Coulter
Phylicia Robinson

Good Attendance

Phylicia Coard
Nia Cornick
Michelle Cuffee
Tasia Davis
Nicole Dove
Stacy Gantt
Michelle Goode
Cecelia Gray
Wesley Harris
Danna Smith
Jaron Tillman
Raymond White

Most Improved

Brandon Barns
Tasia Davis
Nicole Dove
Jaron Tillman
Brogie Wiggins

Science Fair Project

1st Place — Kristen Brewer, Stacy Gantt — Phylicia Robinson

We salute all students who took part in this project for their active participation and achievement. Also, we are grateful to Science and Math Teachers from both schools for their active support and assistance for the project.

The Science and Math for Everyone Project
Year-End Recognition Ceremony Program

11:00 Presiding----------**Dr. Hannah S. Paik**
Project Coordinator

11:05 Greetings----------**Dr. Moses Newsome, Jr., Dean**
Principle Investigator

Mrs. Toni Portlock, Principal
Lake Taylor middle School

Mr. Ted Daughtrey, Principal
Northside Middle School

11:20 Introduction of Teachers & Interns--------**Ms. Sherin Shearin**
DSW Intern

11:30 Inspiration moment----------**Dr. Dong S. Kim**
LUNCH

12:00 Students' Reflection----------**Stacy Gantt**
Dana Smith

12:10 Introduction of Speaker--------**Dr. Clearance Coleman, Dean**
School of H.R.Science

Speaker----------**Dr. Robert O. Scott**
"Converting Possibility into Reality" Professor
Biology Dept.

12:35 Awards----------Outstanding Attendance
Good Attendance
Most Improved
Science Fair

12:50 Student's Pledge

Announcement

Project Personnel

Dr. Moses Newsome, Jr. Principle Investigator
Dr. Hannah S. Paik, Project Coordinator
Mrs. Harriet Brown, Education Coordinator
Ms. Sherin Shearin, DSW Intern

Lead Teachers

Ms. Pamela Arline, Science
Ms. Dana Capehart, Math

MSW Interns

Renee Johnson
Manuel Serrano
Brenda Kittrell
Allison Shirley

BSW Interns

Patricia Edwards
Robert Morris
Jackita Macklin
Angela Walker

Education Interns

Rachel Bonas
Natasha Halsey
Schriee Janet
Daron Moore

The Science and Math for Everyone Project is a research/education intervention strategy made possible by a close partnership among Norfolk State University, Lake Taylor Middle School and NASA Langley Research Center's Office of Education. This innovative project seeks to develop unique strategies that assist disabled, economically disadvantaged and/or minority students succeed in science and math programs. We appreciate NASA Langley Research Center's Office of Education for giving us this opportunity.

The Science and Math for Everyone Project

Year-End Recognition Ceremony

April 28, 1999
11:00 a.m. - 1:00 p.m.
Scott/Dozier Dining Hall

Norfolk State University
School of Social Work
2401 Corprew Avenue
Norfolk, VA 23504
Tel.: 683-8695 Fax: 683-2556

The Student Pledge*

I believe that Science and Math are for all Americans. The Science and Math for Everyone Project is for me and us. I will aim for new horizons. I will motivate my mind and wish to be heard. I will believe in myself and others.

*Developed by Student Participants

Outstanding Achievement in Academics
Renzy Bryant

Most Improved in Academics
Kristen Brewer Danielle Goodman Ciara Vander

Most Improved in Social Interaction
Loretta Chew Cilinte Potter Phylicia Robinson

Outstanding Attendance
Brandon Barnes

Good Attendance
Tyrone Breland Renzy Bryant Loretta Chew
Cory Clayton Tasia Davis Toria Duke
Mycle Parker Ashley Simpson Shailey Vallejo
Raymond White

Science Fair Project
Brandon Barnes Brandon Hodnett Durell McClain
Mycle Parker Phylicia Robinson Dana Smith
Tonie Smith Lucien Testamark

Outstanding Parents' Participation
Mrs. Robin Chew Mrs. Lillian Valejo

We salute all students who took part in this project for their active participation and achievement. Also, we are grateful to Science and Math Teachers for their active support and assistance for the project.

Science and Math for Everyone
Year-End Recognition Ceremony Program

11:00 Presiding----------**Dr. Hannah S. Paik**
Project Coordinator

11:05 Greetings----------**Dr. Moses Newsome, Jr., Dean**
Principal Investigator
Dr. Roger A. Hathaway, University Affairs Officer
NASA LRC Office of Education
Ms. Toni Portlock, Principal
Lake Taylor Middle School

11:20 Introduction of Teachers & Interns--**Ms. Sherin Shearin**
Social Work Supervisor

11:30 Moment of Inspiration ----------**Mrs. Harriet Brown**
Education Coordinator

LUNCH

12:00 Students' Reflection----------Tasia Davis
Ciara Vander

12:10 Introduction of Speaker----------**Mrs. Dana White**
Math Lead Teacher

"Preparing for the Knock of Opportunity"
Dr. Lydia Pettis Patton

12:35 Awards----------**Mrs. Pamela Arline**
Science Lead Teacher

Outstanding Achievement in Academics
Most Improved in Academics
Most Improved in Social Interaction
Outstanding Attendance
Good Attendance
Science Fair Project
Outstanding Parents' Paticipation

12:50 Student's Pledge

(G)Newsletters

SCIENCE & MATH FOR EVERYONE

Partnership with NASA, NSU, and Lake Taylor Middle School

Volume 1, Issue 1 *September 8, 1998*

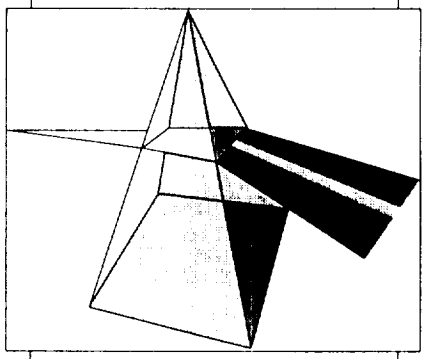
Dr. Moses Newsome Jr.
Principal Investigator

Welcome to the Science and Math for Everyone project. This project is a research/education intervention strategy made possible by a close partnership between Norfolk State University, NASA Langley Research Center's Office of Education, and Lake Taylor Middle School. This innovative project seeks to develop unique strategies that assist minority students and economically disadvantaged students, who have an interest in science and math, to advance their skills and knowledge in the areas of science and math.

There will be a total of 12 interns. BSW interns and BS educational interns will assist students by organizing group activities which are designed to promote higher achievement in science and math. BSW interns will also offer individual counseling and group sessions to promote motivation, self-esteem, assertiveness, communication skills, conflict resolution, interpersonal relationships, etc. Educational interns will work with students to improve their performance in science and math by implementing special science projects, with special assistance with homework, and an individualized study contract. MSW interns will work primarily with the families of project participants by empowering parents to support and encourage their children's achievement by conducting parent training groups, and providing appropriate linkages with community resources. This project will enhance student's interests and performance in science and math by providing special projects, internet, science fair, and field trips. Among several benefits for teachers, will be a training program on cultural sensitivity. This project is a collaborative work among teachers, interns, students, and administrators.

SCIENCE AND MATH STUDENT PLEDGE:

I BELIEVE THAT SCIENCE AND MATH ARE FOR ALL AMERICANS. THE SCIENCE AND MATH FOR EVERYONE PROJECT IS FOR ME AND US. I WILL AIM FOR NEW HORIZONS. I WILL MOTIVATE MY MIND AND WISH TO BE HEARD. I WILL BELIEVE IN MYSELF AND OTHERS. I WILL DO MY BEST TO PARTICIPATE IN THE PROJECT.



TELEPHONE NUMBERS

Project Coordinator
Dr. Hannah S. Paik 683-9592

Project Secretary
Jennifer Barksdale 683-8695

Principal Lake Taylor
Mrs. Toni Portlock 441-5635

Announcements

The first after school meeting will be held on Tuesday, September 15, 1998. The 8th Grade Students will meet in room 113, (Mrs. Arline's room), and the 7th grade students will meet in room 219, (Mrs. White-Capehart's room). Will see you all soon!

***The after school program meets on Tuesday, Wednesday, and Thursday.**

Parent Orientation:

An orientation program for parents was held on Wednesday, August 12, 1998 at 6:00 p.m. at Lake Taylor Middle School. Sherin Shearin, DSW Intern/Social Work Supervisor and Harriet Brown, Education Coordinator, NSU facilitated the program. Parents attending the program were provided with a great deal of information about the Science and Math for Everyone project. Many questions were asked and answered about their child's participation. Mrs. Portlock, Principal, provided parents with additional information as it relates to the schools participation and emphasized the enthusiasm felt by all of the teachers involved.

Intern Orientation:

All 12 interns participated in an orientation on Wednesday, September 2, 1998 from 3:00 - 7:00 p.m. at NSU. The proposal was reviewed and the purpose and research design were explained. Guidelines and expectations of the interns and carrying out of the objectives of the project were reviewed. All of the participants were made aware of the positive impact that they could have on the lives of students. There were also positive hints given toward effective group management.

27093
Norfolk State University
2401 Corprew Avenue
Norfolk, VA 23504

SCIENCE & MATH FOR EVERYONE

The Ethelyn R. Strong School of Social Work, Norfolk State University

Partnership with NASA, and Lake Taylor Middle School

Volume 1, Issue 2 *November 30, 1998*

Outstanding Cooperation

It is a real honor to have the opportunity to work with the Science and Math for Everyone Program for a second year. Last year our students were delighted to receive the extra assistance, one-on-one encouragement, and new learning experiences that the interns provided. Our Lake Taylor Middle teaching staff also had an opportunity to grow by participating in in-service programs and by watching the enthusiasm of the students.

This year we have established the following goals:

- **To increase parental involvement in the program;**
- **To introduce more science and math related careers to the students;**
- **To have more student contact with on-site minority representatives from NASA;**
- **To visit universities to build students awareness of the college/ university experience.**

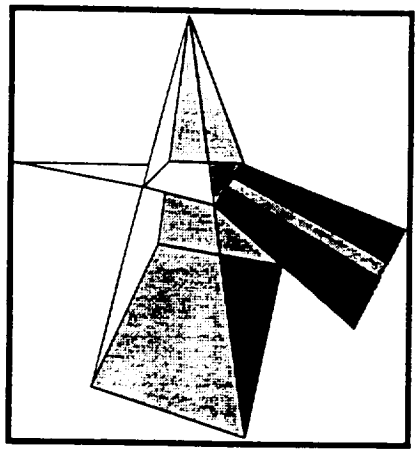
Because of the outstanding cooperation between Lake Taylor Middle School, NASA, and Norfolk State University, I feel confident that we will help our students build their confidence in their abilities to pursue science and math-related careers.I am looking forward to another great year.

Toni Y. Portlock, Principal,
Lake Taylor Middle school

Activities to Integrate Mathematics & Science

The Science and Math for Everyone Project is successfully going into the eleventh week in the 1998-1999 academic year. The students have completed several AIMS (Activities to Integrate Mathematics and Science) and social development activities geared to enhance them both academically and socially. They have also been working on their individual or group Science Research Investigations. They are choosing their topics with enthusiasm based on their completion of an interest survey. The students are looking forward to the first scheduled field trip of the year to the Virginia Marine Science Museum. Student participation and enthusiasm are heightening and we are looking forward to another fruitful year.

Mrs. D. White, Lead Teacher



Scientific Research Investigation & Field Trip

The NSU Education Coordinator for the Science and Math for Everyone Project makes weekly visits to Lake Taylor Middle School. The NSU Education Interns are observed as they conduct activities with the project participants. They are advised regarding procedures and practices that are utilized with the students and they are provided with a wealth of material that can be used to enhance their interaction with the students especially concerning the scientific research investigation process that each of the students will be working with.

Conferences have been held with the principal of Lake Taylor which have been very rewarding. As a result, we have met several goals:

- Space has been designated within the school building for the students to conduct experiments and begin work on their projects.
- Four (4) computers were made available to the project so that we now have a total of six (6).
- School science teachers give class credits to those students working on Scientific Research Investigation's within the project.
- A parent's meeting is being arranged to inform them of what the project is doing in relation to the upcoming Science Fair, and to enlist their aid and encouragement in enabling the students success with their Scientific Research Investigation's.

On December 3, 1998 the students will attend a field trip to the Virginia Marine Science Museum. There will be presentations entitled: "What is a Habitat", "CLAWS: Crabs and Their Kin", and a "Behind the Scenes Tour", through which the students will learn how the animals are cared for, and how their environments are maintained.

We are looking forward to some exciting experiences within our project.

I'M A LIFE TOUCHER

Remember: All Teachers aren't Life Touchers, but all Life Touchers are definitely Teachers

Teachers:	Life Touchers:
Push	Pull
Agonize	Organize
Give Examples	Are the examples
Teach a subject	Are subject to touching lives while teaching Life Lessons
Try to change others	Change themselves
Sometimes get bitter	Get better and better
Don't Like change	Change what they don't like (by changing what they have to look at or changing the way they look at it
Concentrate on grades	Help students concentrate and grade their own progress
Are interested in teaching	Are interesting as teachers
Help students get thru tests	Help people get thru life
Demand answers to the questions	Encourages questions of the answers
Have a room full of short adults	Have a class full of human beings
Teach (glove compartment)	Train (trunk)
Know their subject matter	Know what to do when the subject doesn't matter
Call kids winners or losers	Realize we are all choosers
Label kids with periods	Help people find themselves
Know what is taught	Know it's what's caught that counts
Have trouble makers	Recognize hurting kids who are having trouble making it
Try to raise morale	Realize morale filters down from the top (the life toucher)
Have bad bunches	Take full responsibility for the learning atmosphere in their classroom
Talk the message	Walk the message
Tell	Explain

Happy Life Touching: Bill Sanders

ANNOUNCEMENTS

Field Trip to the Virginia Marine Science Museum December 3, 1998.

Tentative Schedule:

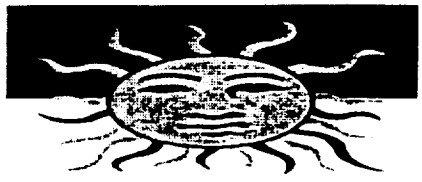
Leave School	8:15
Arrive Museum	9:00
Teacher Led Tours	9:00-10:30
Lunch Group 1	10:30-11:00
Group 2	11:00-11:30
Activities	10:30-1:00

- Behind the Scenes Tour
- CLAWS: Crabs and Their Kin
- Walk to Owls Creek Marsh Pavilion
- What is a Habitat

Snack	1:00-1:15
Teacher Led Tours	1:15-3:00
Leave Museum	3:00

Telephone Numbers

Project Coordinator: Dr. Hannah S. Paik	683 - 9592
Ed. Coordinator: Harriet Brown	683 - 8705
SW Supervisor: Sherin Shearin	441 - 2916
Project Secretary: Jennifer Barksdale	683 - 8695
Principal Lake Taylor: Toni Portlock	441 - 5635



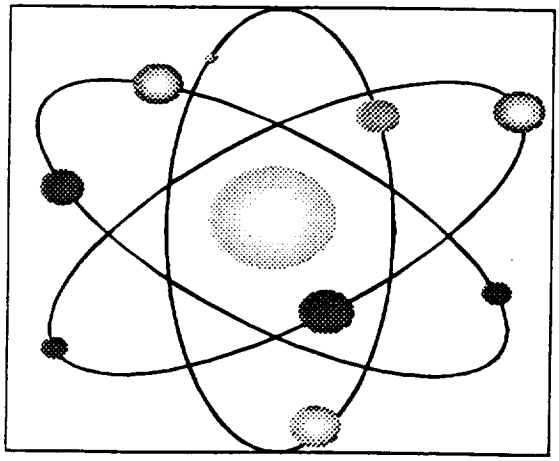
SCIENCE & MATH FOR EVERYONE

The Ethelyn R. Strong School of Social Work, Norfolk State University
Partnership with NASA, and Lake Taylor Middle School

January 5, 1999 *Volume 1, Issue 3*

HAPPY NEW YEAR

We hope you have had a joyous and relaxing holiday, and bring you greetings and best wishes for the new year. We have many exciting activities planned for our students and parents this year. The After School Program will resume on Tuesday, January 12, 1999. See you there!

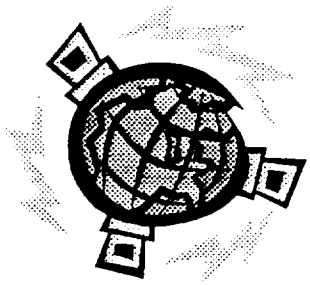


INTERN ORIENTATION

All of Our Interns will meet on January 8, 1999 from 10:00 a.m. to 1:00 p.m.to discuss strategies and activities to enhance student's learning experience in the Science and Math for Everyone Project. New Educational Interns will be introduced.

Field Trip to Virginia Marine Science Museum

On Thursday, December 3, 1998, the NASA Science and Math for Everyone Project sponsored a field trip to the Virginia Marine Science Museum in Virginia Beach. This was an all day event, scheduled from 8am-4pm. Fifty-three seventh and eighth grade students who participate in the program attended the trip. The agenda consisted of teacher led tours to explore the different exhibits, a behind the scenes tour of the museum to observe how the museum workers feed and take care of the animals, and a viewing of an interactive movie on salt water marshes. The students met the museum curator, Maylor White, who gave a presentation on career opportunities that can be attained in working in a museum. Students learned the requirements for jobs in a museum and were given an opportunity to ask questions of the curator about his job. All who participated in this event appeared to enjoy the field trip. Ten NASA project interns enjoyed sharing the exhibits with the students who particularly enjoyed the hands on, interactive exhibits. We are looking forward to future successful field trips.



Attitude is a little thing that makes a big difference!

Upcoming Events

There is a Cultural Sensitivity Workshop for teachers and interns planned at Lake Taylor Middle School on January 21, 1999, from 12:45 to 2:45 p.m. Dr. James Patton, Associate Dean & Professor of the School of Education, The College of William and Mary will be our Guest Speaker.

There will be a trip to Jefferson Lab on January 26, 1999. The bus will depart Lake Taylor Middle School at 11:00 a.m.

A Parents Workshop has been scheduled for January 26, 1999 from 7:00-8:30 p.m., in the Library at Lake Taylor Middle School. The topic will be Planning for Your Child's Future Education.
All parents and friends are invited.

For further information, please contact:

Dr. Hannah Pak
Project Coordinator
683-9592

Jennifer Barksdale
Secretary
683-8695

Parents Meeting on Scientific Research Investigation

A Parents Workshop was held on November 17, 1998 from 7:00 to 9:00 p.m. Over 20 parents and students attended. Mrs. Pam Arline explained each step, interacting with parents and students. Everyone enjoyed a scientific process to answer research questions.

Time with Professor of NSU

On November 24, 1998, Mr. Ronald Green, a faculty member of the Chemistry Department, Norfolk State University came to meet with our students. He demonstrated several experiments, first using sodium and water, ping pong ball, paper and ruler, and each student was able to participate in the experiment. He also showed a flame test using chemicals, powders, flash, and metals. In between experiments, he discussed various careers in the Science field and the requirements. Students were pleased and excited about this opportunity.

Exploration of field Trip to Smithsonian Museum Washington D.C

We hope to plan a field trip to the Space Museum in Washington D.C. in early April, 1999. We are concerned about absence from classes, so we do not want to hold the field trip on a weekday. We are exploring how many students can attend the field trip on a Saturday from 6:00 a.m. to 8:00 p.m. We would also like to know if it is easier to pick-up and drop off students at Lake Taylor Middle School, or at Norfolk State University. Please fill out the attached questionnaire and return it to the interns at the after school program as soon as possible.

I prefer the field trip to take place on:

_____ A Saturday in March

or

_____ During Spring Vacation (Apr 5-9) M T W TR F
(circle one)

I am willing to provide or to arrange transportation to the field trip to Washington on a Saturday.

_____YES _____NO

I prefer to drop off and pick up my child at:

_____ Norfolk State University (Corner of Brambleton and Park Avenue)

or

_____ Lake Taylor Middle School

_____ _____
(Students Name) (Parents Name)

SCIENCE & MATH FOR EVERYONE

Partnership with NASA, NSU, and Lake Taylor Middle School

Volume 1, Issue 4 *March 16, 1999*

Parental Workshops

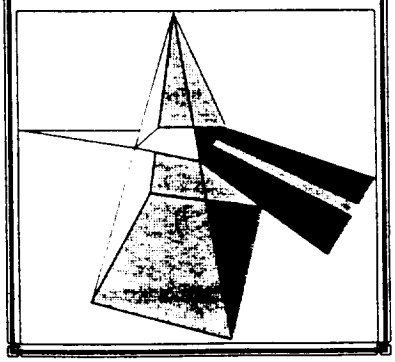
The Parental Workshop on Education was held on January, 26, 1999. The workshop offered parents information regarding college preparation and financial aid. The importance of developing good study skills as 7th and 8th graders was discussed, and how strengthening these skills can improve their academic performance in high school. Mr. Todd Fritz, our guest speaker, answered questions about the PSAT and SAT. As a guidance counselor for a local high school, Mr. Fritz suggested taking the PSAT as a study guide for the SAT, and taking the SAT after the student has completed geometry.

Parents were also given information about the Virginia prepaid education program offered by the Commonwealth of Virginia. This program allows parents to prepay tomorrow's tuition at today's prices. Several tips were given to parents to help their children succeed in education.

On February 18, Stress Management was the topic of parental workshop. The speaker, Ms. Youngblood, was a delightful treat for those present. She has counseled disturbed adolescents and addicted adults and is presently employed as a motivational speaker. Before the workshop, she chatted and mingled with the attendants. She began the workshop by placing stress dots on members of the audience. She explained how during stressful moments, our circulation cuts off. Depending on the color of the dots, we could detect our current stress levels. She spoke about good stress then went on to explain that good stress can motivate us to obtain goals, but having long periods of stress without relaxation or down time can overwhelm us.

She gave us many tips for managing stress such as perspective, keeping it simple, keeping a positive mental picture and staying focused. Ms. Youngblood was a captivating speaker.

Our next parental workshop entitled Bridging the Communication Gap With Your Adolescent will be held at 6:00 p.m. on Wednesday, March 17, 1999 at Lake Taylor Middle School Library. Please join us.



Successful Events

Field Trip to Jefferson Laboratory

On January 26, 1999 our students attended a field trip to the Jefferson Laboratory in Hampton, VA. We took a guided tour, and completed a worksheet entitled Jefferson Lab Treasure Hunt. The worksheet briefed the students on the main elements of the laboratory, and named various instruments which were found there.

Jefferson Lab's main focus is to study the atom and figure out the structure of the nucleus. They do this by using machines that are approximately 25 feet beneath the ground and a beam that starts in an electronic accelerator. The beam travels at 186,000 miles per second, which is almost the speed of light.

The students had a great time on this field trip They especially enjoyed the experiments that they were able to participate in.

Project Coordinator
Dr. Hannah S. Paik 683-9592

Project Secretary
Jennifer Barksdale 683-8695

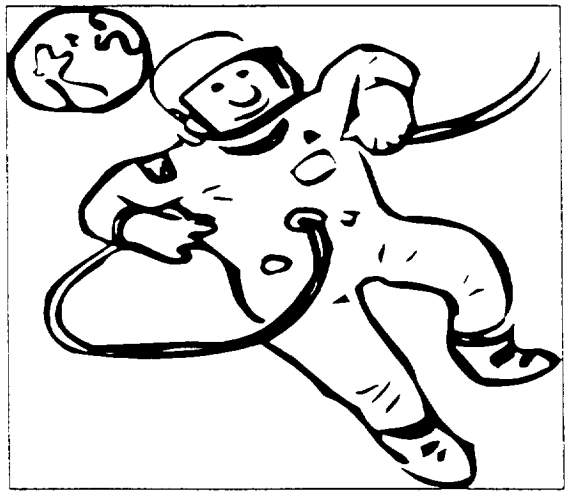
Principal Lake Taylor
Mrs. Toni Portlock 441-5635

Announcements

Don't Forget!
Field Trip to Washington D.C.

The Smithsonian National Air and Space Museum
Tuesday, March 23, 1999

We will depart from Lake Taylor Middle School at 5:15 a.m., and return at 8:30 p.m.



Parents: Please have your child wear their Science & Math for Everyone T-Shirts and Buttons on the field trip. If your child does not have a T-shirt, or Button, please let us know.

WE'RE CELEBRATING!

The end of another successful year of the Science & Math for Everyone Project, is quickly approaching. We are very proud of our students and interns who have worked very hard to make our program a success. We have planned an end of the year Recognition Ceremony at Norfolk State University on April 28, 1999.

This ceremony is an opportunity for us to reward your children and celebrate their efforts. Our guest speaker will be Dr. Lydia Pettis Patton, Director of Parks, Recreation and General Services for the City of Portsmouth, Virginia, and Writer and Producer of the Hip Tips radio series. All parents and family members of the participants are invited to attend.

Please come and join in our celebration.

(H)Student Survey Forms

THE SCIENCE & MATH FOR EVERYONE PROJECT

NASA & NSU & Lake Taylor Middle School

INTEREST SURVERY

The purpose of this survey is to find out how to keep your interest in the after-school program of the Science & Math for Everyone Project. Please check the statement that you agree. When you finish the survey, please return it to Mrs. White in Room 219.

1. During the after-school program, I would like to do more

   ___fun things. ___math & science. ___field trips. ___group activities.

   ___science fair project ___things related to class work.

2. I would like to go to the after-school program

   ___one day a week. ___two days a week ___three days a week.

3. I participate in other extra-curricula activities after school, and they are

   _____, _____, _____
   ___none.

4. I would rather to go to other extra curricula activities

   ___because I lost interest in the Science and Math for Everyone.
   ___because the other activities are seasonal.
   ___because the other activities are more fun.
   ___because my parents want me to attend the other activities.

5. I would like to see some changes in the Science & Math for Everyone Project. (Please describe them.)

6. My homeroom teacher is _____.

7. My name is _____.

Thank you so much for your time.

SCIENCE AND MATH FOR EVERYONE PROJECT

STUDENT EVALUATION

Grade: _____

Please circle the appropriate response, to the following statements, that best describes your opinion of the 'Science and Math for Everyone Project'.

1. The purpose of the 'Science and Math for Everyone Project' was very clear to you.
Strongly Disagree Somewhat Disagree Disagree

2. The activities of the project helped to clarify the purpose of the project.
Strongly Agree Somewhat Agree Agree Disagree Strongly Disagree

3. The self-esteem activities were instrumental in helping to improve your self-esteem.
Strongly Agree Somewhat Agree Agree Disagree Strongly Disagree

4. The educational activities provided new and helpful information.
Strongly Agree Somewhat Agree Agree Disagree Strongly Disagree

5. The project activities were not very informative.
Strongly Agree Somewhat Agree Agree Disagree Strongly Disagrcc

6. The science activities were helpful to me in my science classes.
Strongly Agree Somewhat Agree Agree Disagree Strongly Disagree

7. There was too much science activities and not enough math activities.
Strongly Agree Somewhat Agree Agree Disagree Strongly Disagree

8. The math activities were helpful to me in my math classes.
Strongly Agree Somewhat Agree Agree Disagree Strongly Disagree

9. There was too much math and not enough science activities.
Strongly Agree Somewhat Agree Agree Disagree Strongly Disagree

10. The field trips were relevant to what the project was all about.
Strongly Agree Somewhat Agree Agree Disagree Strongly Disagree

Open-Ended Questions:

11. What were some of your frustrations with the project?

12. What did you like most about the project?

13. What did you like the least about the project?

14. How could you make the activities of the project better?

15. What benefits do you think you got from participating in this project?

SCIENCE AND MATH FOR EVERYONE PROJECT
Student Profile

Teacher's Name:_____ School:_____

Student's Name:_____ Subject:_____

Date:_____

Present Performance Level of Student

	STRENGTH	WEAKNESS
ACADEMIC		
SOCIAL		

Occupational Interest (if known):_____

Comments:_____

_____

_____

Interns:_____

SCIENCE AND MATH FOR EVERYONE PROJECT

Individualized Study Plan

Teacher's Name:_____ School:_____

Student's Name:_____ Subject:_____

Date:_____

Monthly Goals:_____

Short Term Objectives	**Evaluation Criteria**	**Evaluation Procedure**

Comments:_____

_____

_____

Interns:_____

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